KYOCERA

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User's Manual

Kyocera Laser Printer **FS-7000+**

The FS-7000+ in this photograph is equipped with two optional paper feeders and an optional document finisher.

Caution

NO LIABILITY IS ASSUMED FOR ANY DAMAGE CAUSED BY IMPROPER INSTALLATION.

Notice on Software

SOFTWARE USED WITH THIS PRINTER MUST SUPPORT THE PRINTER'S NATIVE MODE OR ONE OF ITS EMULATION MODES. The printer is factory set to emulate the HP LJ 5M/5Si. The emulation mode can be changed by following the procedures described in Chapter 2.

Notice

The information in this manual is subject to change without notification. Additional pages may be inserted in future editions. The user is asked to excuse any technical inaccuracies or typographical errors in the present edition.

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This product was developed using the Tornado™ Real Time Operating System and Tools from Wind River Systems.

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This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Changes or modifications not expressly approved by the manufacturer for compliance could void the user's authority to operate the equipment.

Shielded circular cable should be used for interfacing with the computer.

Caution to user
Any modification without prior permission may cause harmful interference.

If any modification/change is introduced to this equipment without prior permission, Kyocera as the manufacturer cannot guarantee compliance with FCC rules.

To use equipment which does not comply with FCC rules is prohibited.

The printer may be optionally installed with the following options:

Conforming to the Class B limits

- PF-30 Paper Feeder (500 sheets)
- EF-1 Envelope Feeder
- UF-1 Universal Feeder
- DU-30/DU-31 Duplexers
- ST-30 Bulk Paper Stacker (3000 sheets)
- SO-30 Mail Box/Sorter
- DF-30/DF-31 Document Finishers (1800 sheets)
- HD-1/HD-2 Hard Disk Units
- BC-1 Barcode Reader

Interface connectors

Important note on the interface connectors
Be sure to turn off printer power before connecting or disconnecting an interface cable* to the printer. For protection against static discharge which may be applied to the printer's internal electronics through the interface connector(s), keep any interface connector which is not in use capped using the protective cap supplied.

*** Use shielded interface cable.**

Safety information

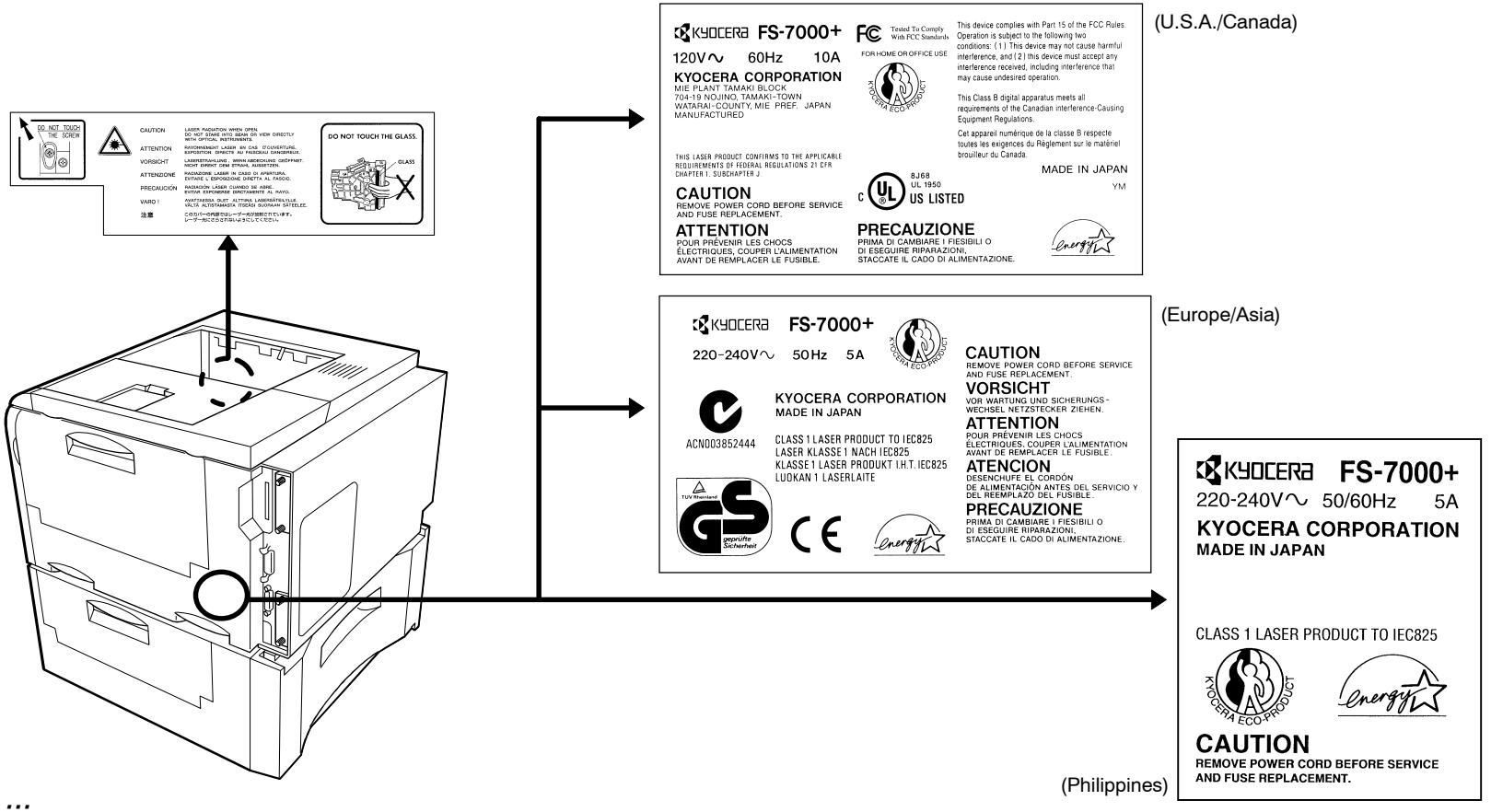
Laser safety
This printer is certified as a Class 1 laser product under the U.S. Department of Health and Human Services (DHHS) Radiation Performance Standard according to Radiation Control for Health and Safety Act of 1968. This means that the printer does not produce hazardous laser radiation. Since radiation emitted inside the printer is completely confined within protective housings and external covers, the laser beam cannot escape from the printer during any phase of user operation.

Laser notice
This printer is certified in the U.S. to conform to the requirements of DHHS 21 CFR Subchapter for Class I (1) laser products, and elsewhere is certified as a Class I laser product conforming to the requirements of IEC 825.

CAUTION

Laser radiation when open. DO NOT STARE INTO BEAM OR VIEW DIRECTLY WITH OPTICAL INSTRUMENTS.

* **Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.**


DO NOT TOUCH THE SCREW
CAUTION
ATTENTION
VORSICHT
ATTENZIONE
PRECAUCIÓN
VARO !
DO NOT TOUCH THE GLASS.
GLASS
KYOCERA FS-7000+
120V~ 60Hz 10A
KYOCERA CORPORATION
MIE PLANT TAMAKI BLOCK
704-19 NOJINO, TAMAKI-TOWN
WATARAI-COUNTY, MIE PREF. JAPAN
MANUFACTURED
Tested To Comply With FCC Standards
FOR HOME OR OFFICE USE
This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.
This Class B digital apparatus meets all requirements of the Canadian interference-Causing Equipment Regulations.
Cet appareil numérique de la classe B respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.
THIS LASER PRODUCT CONFIRMS TO THE APPLICABLE REQUIREMENTS OF FEDERAL REGULATIONS 21 CFR CHAPTER 1. SUBCHAPTER J.
MADE IN JAPAN
YM
8J68
UL 1950
US LISTED
CAUTION
REMOVE POWER CORD BEFORE SERVICE AND FUSE REPLACEMENT.
ATTENTION
POUR PRÉVENIR LES CHOCS ÉLECTRIQUES, COUPER L'ALIMENTATION AVANT DE REMPLACER LE FUSIBLE.
PRECAUZIONE
PRIMA DI CAMBIARE I FIESIBILI O DI ESEGUIRE RIPARAZIONI, STACCATE IL CADO DI ALIMENTAZIONE.
(U.S.A./Canada)
KYOCERA FS-7000+
220-240V~ 50Hz 5A
KYOCERA CORPORATION
MADE IN JAPAN
ACN003852444
CLASS 1 LASER PRODUCT TO IEC825
LASER KLASSE 1 NACH IEC825
KLASSE 1 LASER PRODUKT I.H.T. IEC825
LUOKAN 1 LASERLAITE
CAUTION
REMOVE POWER CORD BEFORE SERVICE AND FUSE REPLACEMENT.
VORSICHT
VOR WARTUNG UND SICHERUNGS-WECHSEL NETZSTECKER ZIEHEN.
ATTENTION
POUR PRÉVENIR LES CHOCS ÉLECTRIQUES, COUPER L'ALIMENTATION AVANT DE REMPLACER LE FUSIBLE.
ATENCION
DESENCHUFE EL CORDÓN DE ALIMENTACIÓN ANTES DEL SERVICIO Y DEL REEMPLAZO DEL FUSIBLE.
PRECAUZIONE
PRIMA DI CAMBIARE I FIESIBILI O DI ESEGUIRE RIPARAZIONI, STACCATE IL CADO DI ALIMENTAZIONE.
(Europe/Asia)
KYOCERA FS-7000+
220-240V~ 50/60Hz 5A
KYOCERA CORPORATION
MADE IN JAPAN
CLASS 1 LASER PRODUCT TO IEC825
CAUTION
REMOVE POWER CORD BEFORE SERVICE AND FUSE REPLACEMENT.
(Philippines)

CDRH regulations

The Center of Devices and Radiological Health (CDRH) of the U.S. Food and Drug Administration implemented regulations for laser products on August 2, 1976. These regulations apply to laser products manufactured after August 1, 1976. Compliance is mandatory for products marketed in the United States. A label indicating compliance with the CDRH regulations must be attached to laser products marketed in the United States.

Ozone concentration

The printer generates ozone gas (O_3) which may concentrate in the place of installation and cause an unpleasant smell. To minimize concentration of ozone gas to less than 0.1 ppm, we recommend you not to install the printer in a confined area where ventilation is blocked.

IMPORTANT SAFEGUARDS

1. Read all of these instructions and save these instructions for later use.
2. Unplug this product from the wall outlet before cleaning.
3. Do not use this product near water.
4. Do not place this product on an unstable cart, stand, or table. The product may fall, causing serious damage to the product.
5. Slots and openings in the cabinet and the back are provided for ventilation to ensure reliable operation of the product and to protect it from overheating, these openings must not be blocked or covered. The openings should never be blocked by placing the product on a bed, sofa, rug, or other similar surface. This product should never be placed near or over a radiator or heat register. This product should not be placed in a built-in installation unless proper ventilation is provided.

6. This product is equipped with a 3-wire grounding type plug, a plug having a third (grounding) pin. This plug will only fit into a grounding-type power outlet. This is a safety feature. If you are unable to insert the plug into the outlet, contact your electrician to replace your obsolete outlet. Do not defeat the purpose of the grounding-type plug.

7. Do not allow anything to rest on the power cord. Do not locate this product where persons will walk on the cord.

8. If an extension cord is used with this product, make sure that the total of the ampere ratings on the products plugged into the extension cord do not exceed the extension cord ampere rating.

9. Never push objects of any kind into this product through cabinet slots as they may touch dangerous voltage points or short out parts that could result in a risk of fire or electric shock. Never spill liquid of any kind on the product.

10. Except as explained elsewhere in User's Manual, do not attempt to service this product yourself. Removing covers may expose you to dangerous voltage points or other risks. Refer all servicing in those compartments to service personnel.

11. Unplug this product from the wall outlet and refer servicing to qualified service person-nel under the following conditions:

A — When the power cord or plug is damaged or frayed.
B — If liquid has been spilled into the product.
C — If the product has been exposed to rain or water.
D — If the product does not operate normally when the operating instructions are followed. Adjust only those controls that are covered by the operating instructions since improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the product to normal operation.
E — If the product has been dropped or the cabinet has been damaged.

Declaration of Conformity (U.S.A.)

Model Number:	FS-7000+
Trade Name:	Kyocera
Responsible Party:	Kyocera Electronics Inc.
Address:	11465 John's Creek Parkway Suite #250 Duluth, GA30097, U.S.A.
Telephone number:	770-623-2150
Fax number:	770-623-2151
Contact person for technical matter:	Paul Bosak
Phone:	770-623-2163

This device complies with Part 15 of the FCC Rules, Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

CE Marking Directive

according to *Council Directive 89/336/EEC and 73/23/EEC*

Manufacturer's name:	Kyocera Corporation, Printer Division
Manufacturer's address:	2-14-9 Tamagawadai, Setagaya Ward, Tokyo 158-8610, Japan

declares that the product

Product name:	Page Printer
Model number:	FS-7000+ (as tested with enhancement optional units: PF-30, DU-31, DF-31, UF-1, BC-1, and HD-2)

conforms to the following product specifications.

EN 55 022:1994 Class B
EN 61 000-3-2:1995
EN 61 000-3-3:1995

EN 50 082-1:1992
IEC 801-2:1991
IEC 801-3:1984
IEC 801-4:1988

EN 60 950:1992 (+A1+A2+A3+A4)
EN 60 825-1:1994+A11

The manufacturer and its merchandising companies retain the following technical documentation in anticipation of the inspection that may be conducted by the authorities concerned.

User's instruction that conforms to the applicable specifications
Technical drawings
Descriptions of the procedures that guarantee the conformity
Other technical information

Declaration of Conformity (Australia)

Manufacturer's name: Kyocera Corporation, Printer Division
Manufacturer's address: 2-14-9 Tamagawadai, Setagaya Ward, Tokyo 158-8610, Japan

declares that the product

Product name: Page Printer
Model number: FS-7000+ (as tested with enhancement optional units: as PF-30, DU-31, DF-31, UF-1, BC-1, and HD-2)

Conforms to the following product specifications.

AS/NZS 3548: 1995	(EN 55 022:1994 Class B)
IEC60 950	(EN 60 950:1992+A1+A2+A3+A4)
IEC60 825-1	(EN 60 825-1:1994+A11/09.91)

Description of device:
This page printer model FS-7000+ is the 28-ppm, up to A3 size paper adaptable, printer that utilizes plain paper, laser, dry toner etc. The printer can be equipped with several enhancement optional units such as the paper feeder PF-30, duplexer DU-30/DU-31, stacker ST-30, mail box/sorter SO-30, etc.

The manufacturer and its merchandising companies retain the following technical documentation in anticipation of the inspection that may be conducted by the authorities concerned.

User's instruction that conforms to the applicable specifications
Technical drawings
Descriptions of the procedures that guarantee the conformity
Other technical information

KYOCERA ELECTRONICS AUSTRALIA PTY., LTD

Unit 6, 112 Talavera Road, North Ryde NSW 2113, Australia
Phone: +61 2-9888-9999
Fax: +61 2-9888-9588

Canadian Department of Communications compliance statement

This Class B digital apparatus complies with Canadian ICES-003.

Avis de conformité aux normes du ministère des Communications du Canada

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

ISO 7779

Maschinenlärminformationsverordnung 3. GSGV, 18.01.1991: Der höchste Schalldruckpegel beträgt 70 dB(A) oder weniger gemäß ISO 7779.

Safety & EMI Requirements

IEC	IEC950:1991 (+A1+A2+A3+A4) / (IEC825-1:1993)
Laser requirements (U.S.A.)	FDA Title 21, CFR Chapter 1, Subchapter J
	CSA C22.2-950/UL1950:1995 (3rd edition)
FCC	Rules 47 CFR, Parts 2 and 15, subpart B, Class B
CDC	ICES-003 (3rd): 1997, Class B
AS/NZS	AS/NZS 3548: 1995, Class B

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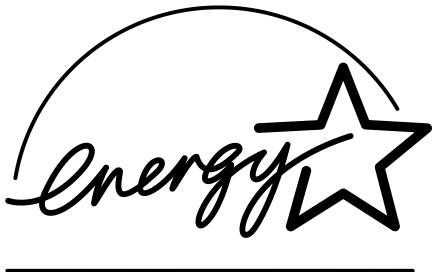
Moving the Printer

When you move the printer:

- Move it gently.
- Keep it as level as possible, to avoid spilling toner inside the printer.
- If you ship the printer, remove the developer unit and ship it separately. Be sure to consult your Kyocera dealer before attempting long-distance transportation of the printer.

ENERGY STAR[SM]



As an ENERGY STAR Partner, Kyocera Corporation has determined that this product meets the ENERGY STAR guidelines for energy efficiency.

The basic objective of the ENERGY STAR Program is to reduce environmental pollution by encouraging the manufacture and sale of equipment that uses energy more efficiently.

This printer is equipped with a sleep timer function that conforms with the standards of the ENERGY STAR Program. This function makes it possible to reduce the amount of electrical power consumed by the printer. For maximum power savings, turn off the printer's power supply when not using the printer for extended periods of time.

For details on the sleep timer function and printer power consumption, refer to the instruction manual provided with the printer.

Initial settings of the sleep timer function and power saved using the sleep timer function:

Initial sleep mode setting	Power consumption in sleep mode
30 minutes (60 minutes)	29 W (45 W)

( ): ENERGY STAR program guideline

Kyocera ECO-PRODUCT

This product has been developed and manufactured with the express interest of reducing the impact on the environment.

Using Kyocera's innovative cartridge free technology, Kyocera has created an advanced printing system that does not require the wasteful replacement and disposal of a cartridge.

Introduction

The Kyocera laser printer has many extremely desirable features. It was designed to make a contribution to a cleaner environment as well as to represent the latest generation of page printer technology.

Superb print quality

With an amorphous silicon drum, microfine ceramic toner, and the latest technology from Kyocera such as KIR (Kyocera Image Refinement) function*, this laser printer delivers superb print quality and clarity. (*See page 2-58.)

Ultra long life modules

The main modules in this laser printer such as the drum, developer unit and fuser unit, which are disposable in conventional printers, are specifically designed for extraordinarily long life and need no periodic replacement. The drum is made of amorphous silicon which is environmentally benign. The only maintenance regularly needed therefore is to replenish the toner supply in the developer approximately every 25,000 printed pages (A4 portrait at a printing rate of approximately 5%) and to clean some parts inside the printer.

Amorphous silicon drum

Kyocera's own unique ceramics technology has led to the development of an extremely hard and durable drum with extraordinarily long service life. Also, the drum has several excellent photoconductive properties, such as stability and reliability in varying temperatures, resistance to heat and solvent, etc., thus providing superb high resolution printing.

High speed printing

A3-size pages typically print at a rate of 16 pages per minute, B4 at 18 pages per minute, and A4 (landscape feed) at 28 pages per minute (when printing multiple copies of the same page). (Actual printing time varies depending on what is being printed.)

Environmentally benign waste parts

The toner container is made out of a benign, flammable material. (Be sure to dispose of containers according to local laws and regulations.)

Large paper capacity cassettes

Equipped at the bottom with a two-stage paper feeder, each paper cassette can hold approximately 500 sheets (80 g/m^2, 0.1 mm thickness). There is also a multi-purpose tray with a capacity of approximately 100 sheets. Paper can be output on a face-down output tray or an optional face-up output tray. Either output tray can stack approximately 500 sheets of paper.

Scalable printing

This printer allows reductions between various paper sizes using the page setup function.

Bitmapped and scalable typefaces

In addition to its 80 internal bitmap fonts, the printer provides 45 fully-scalable resident typefaces that are equivalent to HPLJ fonts. The scalable typefaces can be used at any size desired up to 999.75 points, in 0.25-point increments.

KPDL (Kyocera Printer Description Language)

The printer is equipped with KPDL (Kyocera's implementation of the PostScript page description language) and Adobe PostScript Type 1 compatible 35 fonts.

A new printer control language, PRESCRIBE 2e

PRESCRIBE 2e includes advanced graphics capabilities that allow you to print any conceivable outline shape or solid form. Also provided are a variety of special effects, such as patterned fills, gray-scale shading, a user-accessible print image model, and multiple page orientations and print directions within the same page.

PDF417 two-dimensional bar code

The printer includes the capability that allows the user to implement the two-dimensional stacked bar code symbology, PDF417, or Portable Data File 417. This expanded functionality is achieved by using the PRESCRIBE 2e language commands.

Automatic rotation of fonts and graphics

Images and scalable fonts are automatically rotated to match the page orientation.

A wide variety of internal symbol sets

The printer supports most Hewlett-Packard LaserJet 5M compatible symbol sets for both bitmap and scalable fonts.

Display of printer messages in any of four languages

English, French, German, or Italian. As an option it is also possible to download the messages in other languages. Please contact your Kyocera dealer.

Memory card slot for option fonts, macros, forms, etc.

Data in the memory card can be selectively read from the printer's control panel.

Simple Network Management Protocol (SNMP) compliance

Offers network managers complete open system network management.

Large memory capacity

This printer comes standard equipped with 8 MB of memory. This can be extended up to 72 MB of memory through optional expansion of memory.

Expandable interface

Equipped with slots for installing optional interfaces, the interfaces of this printer can be expanded to meet the specific operating environment.

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Chapter 1
Installing the Page Printer

This chapter uses illustrations to explain the names of parts of this printer, how to use it, its environmental requirements, and how to install it.

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Environmental Requirements of the Page Printer

Places to Avoid

Avoid installing the printer in locations subject to:

- Direct drafts of hot or cold air
- Direct drafts from outside (Avoid locations near doors leading outside.)
- Sudden temperature or humidity changes
- Sources of high temperature, for example, near stoves or radiators
- Excessive dust
- Vibration
- Ammonia or other harmful fumes. (If you are planning to fumigate the room, or make liberal use of insecticide, remove the printer first!)
- Excessive sunlight or humidity
- Lack of ventilation
- Low air pressure, e.g., located more than 2000 meters (6500 feet) above sea level

Basic requirements

The printer will work best if it is installed in a location that is:

- **Near the computer**
  If the parallel interface is used to connect the printer to the computer, the connecting cable should be shielded type and not be longer than 3 meters (10 feet).

- **Level and well supported**
  Place the printer on a sturdy table or desk. Do not place the printer on an unstable cart, stand, or table. The printer may fall, causing injury, or serious damage to the printer.

- **Near an AC wall outlet, preferably one that can be used for the printer alone (see section *Power Supply* on next page.)**

- **Only use this printer under the voltage listed on the serial No. label attached to the rear panel of the printer.**

Power requirements are:

Voltage	120 V (U.S.A./Canada), 220 V to 240 V (European countries), ±10% at each voltage
Frequency	60 Hz (120 V/220 V to 240 V), ±2% 50 Hz (220 V to 240 V), ±2%
Current capacity	Max. 10 A at 120 V, or Max. 5 A at 220 V to 240 V

The outlet should be earthed, or an adapter should be used.

If an extension cord is used, the total length of the power cord plus extension should be 5 meters (17 feet) or less.

- **Well ventilated, not too hot or cold, and too damp or dry**

Temperature	10°C to 32.5°C (50°F to 90.5°F)
Humidity	20% to 80%

If you install the printer where the temperature or humidity is outside the above ranges, you may not get the best print quality, and there will be an increased chance of paper jams.

Power Supply

The printer should not be on the same power circuit as an air conditioner, fluorescent light, copier, or shredder, because these devices generate electrical noise on the power line. If it must share a power circuit with equipment like this, a high-frequency noise filter or isolation transformer is advisable. (Filters and transformers are available commercially.)

Avoid using plug multipliers to connect a large number of devices on the same circuit as the printer.

If the power from the outlet itself appears to be unstable, a line stabilizer should be used. In places where the voltage tends to fluctuate, it may be necessary to install a voltage regulator.

As the disconnect device is not incorporated in the printer's AC primary circuit, an easily accessible socket outlet must be provided near the equipment.

If the printer is used with the optional bulk paper stacker (ST-30), mail box/sorter (SO-30), or document finisher (DF-30/DF-31), in order to avoid short-circuiting, it should be ensured that these devices are plugged securely into their respective power outlets.

Da kein Trennschalter in den Wechselstrom-Primärkreis des Druckers eingebaut ist, muß eine leicht zugängliche Steckdose in der Nähe des Gerätes vorhanden sein.

Wenn der Drucker mit dem gesonderten Stapler (ST-30), Pastfach/Sortierer (SO-30), oder Finisher (DF-30/DF-31) verwendet wird, muß darauf geachtet werden, daß diese Geräte einwandfrei an separate Steckdosen angeschlossen sind, um Kurzschluß zu vermeiden.

Grounding

Be sure to connect the ground wire for the printer's power supply to the ground terminal of the power outlet, to a copper pole buried at least 65 cm (25 inches) in the ground, or to a water pipe approved by the water department for use as a ground.

WARNING

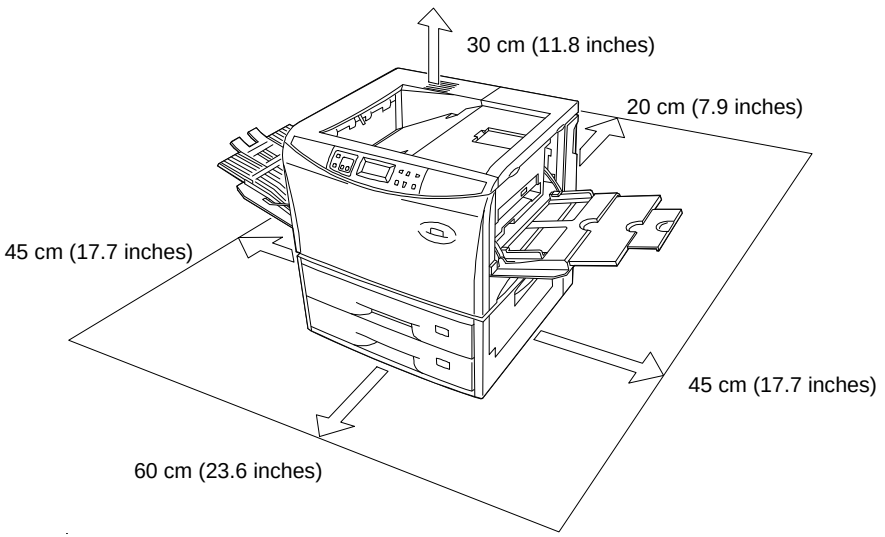
Never use a gas pipe as a ground, as this may result in fire.

Surrounding space

Space surrounding the location where the printer is installed is required as shown below for purposes of ventilation and maintenance.

WARNING

Be sure to secure enough space surrounding the printer. Continued use without enough space may cause heat to build up within the printer, resulting in possible fire.



Basic handling precautions

Removing or changing parts other than disposable parts is prohibited. For repairs, contact the Kyocera dealer from which you purchased the printer.

When moving the printer to a new location, contact the Kyocera dealer from which you purchased the printer.

Using this printer to print currency or negotiable bonds is in violation of the law.

Unpacking and Inspection

Remove the printer from the package according to the steps given below. (See figure on next page.) After removing the printer, check that nothing is missing against the list of packaged contents.

CAUTION

Be sure that two or more people unpack and install the printer. Be very careful as the printer is heavy and can hurt your back.

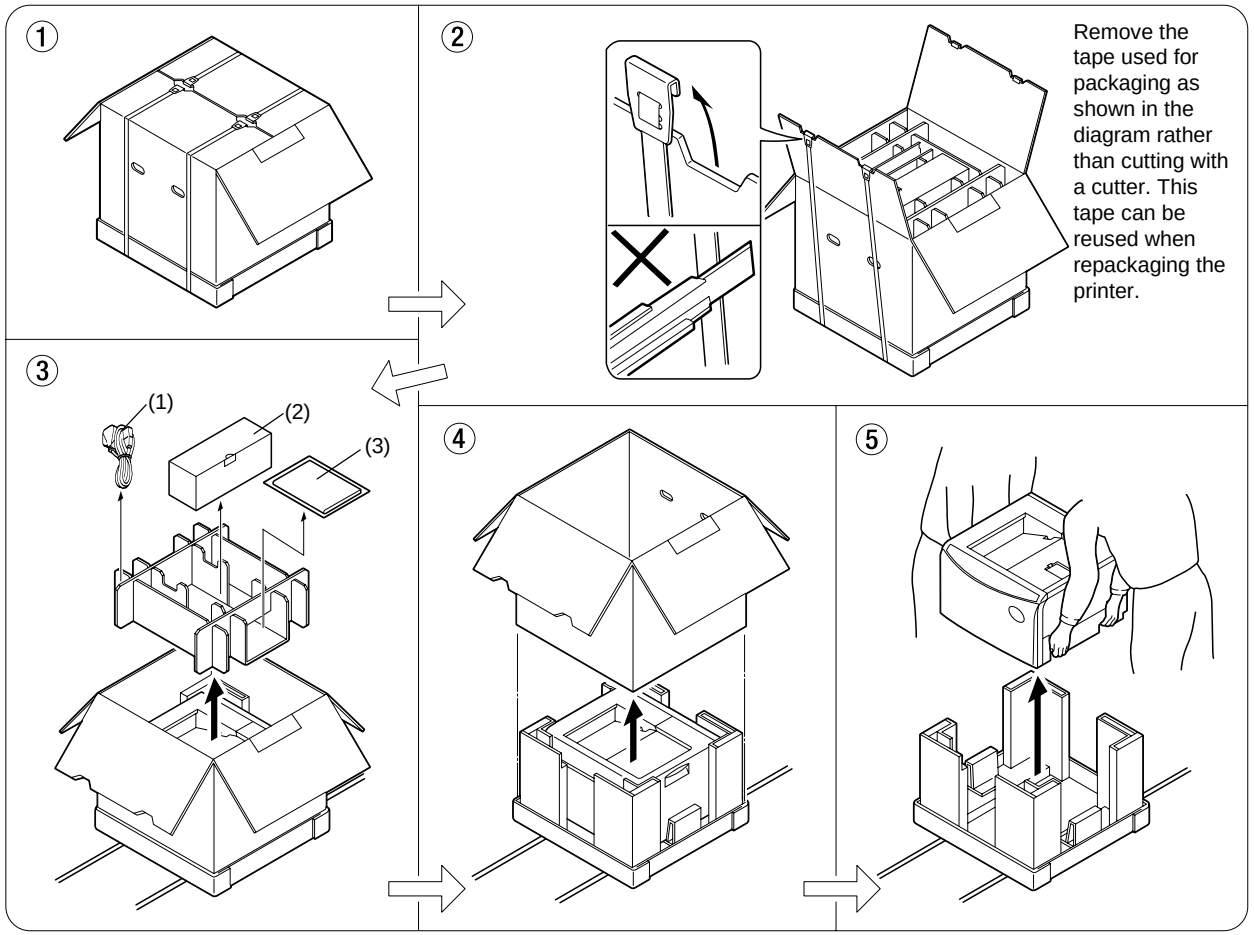
1. Place the box containing the printer on a flat, stable surface.
2. Remove the User's Manual, Toner Kit and other items located on top of the spacer and remove the spacer.
3. Carefully remove the printer.

List of packaged contents

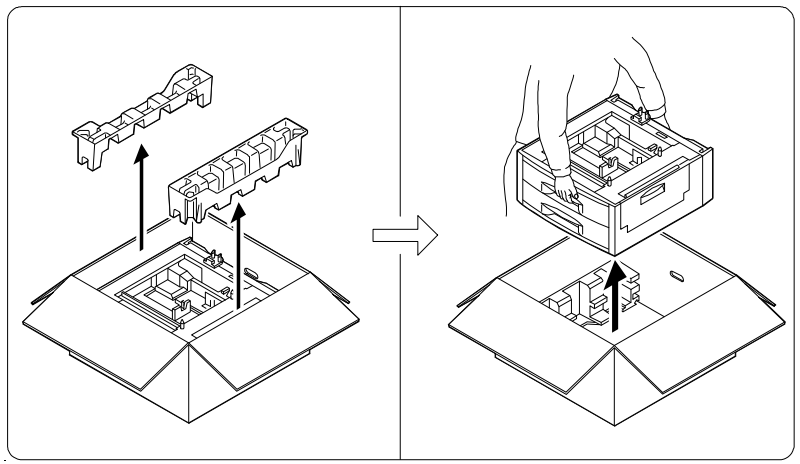
The printer and paper feeder are packaged in separate boxes.

Contents of Printer Box and How to Remove Them

(1) Power Cord
(2) Toner Kit (toner container, cleaning cloth)
(3) User's manual and *Kyocera Digital Library* (CD-ROM) including the printer drivers and manuals.



How to Remove the Paper Feeder



When Not Using the Printer for Extended Periods

Note the following items when not using the printer for extended periods.

CAUTION

Be sure to unplug the printer's power cord if you are not going to use the printer for an extended period. Also be sure to cover the printer so that dust does not accumulate.

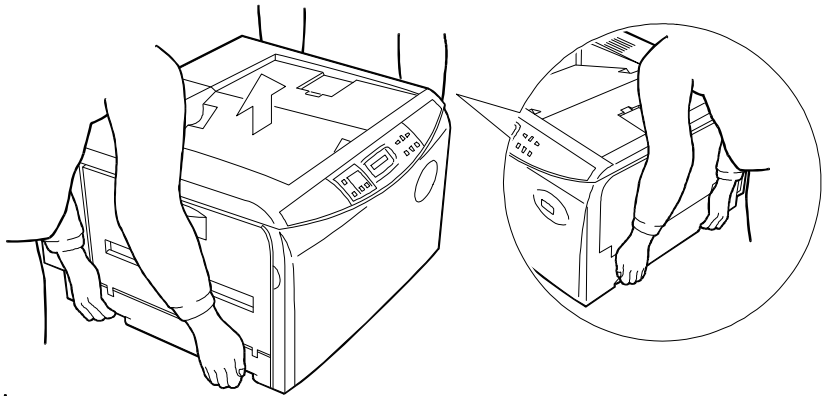
If the printer has not been used for two or more months, we recommend that you contact your Kyocera dealer to have it maintenanced.

Moving the Printer

Note the following items when moving the printer.

CAUTION

Be sure that two or more people lift the printer. Grasp the handholds indicated in the figure below and lift carefully so as not to hurt your back.

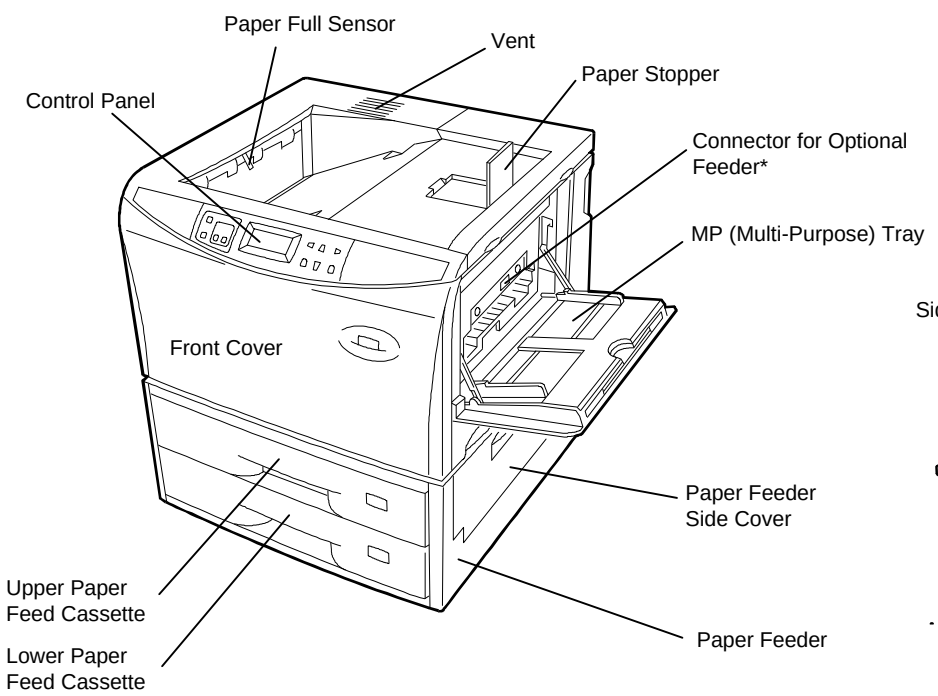


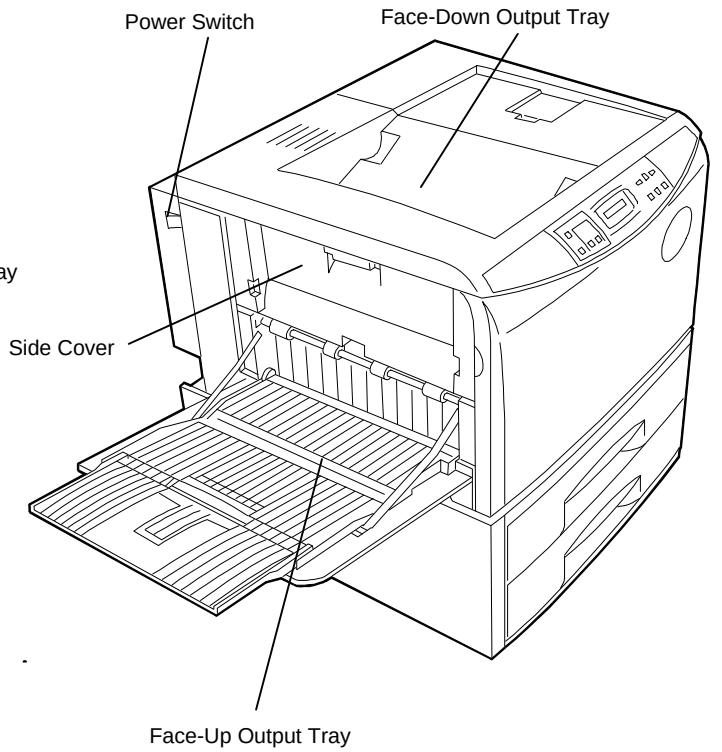
Be sure to lift the printer gently, keeping it horizontal, to prevent toner from soiling the inside of the printer.

When transporting the printer a long distance, contact the Kyocera dealer from which you purchased the printer.

Names of Parts

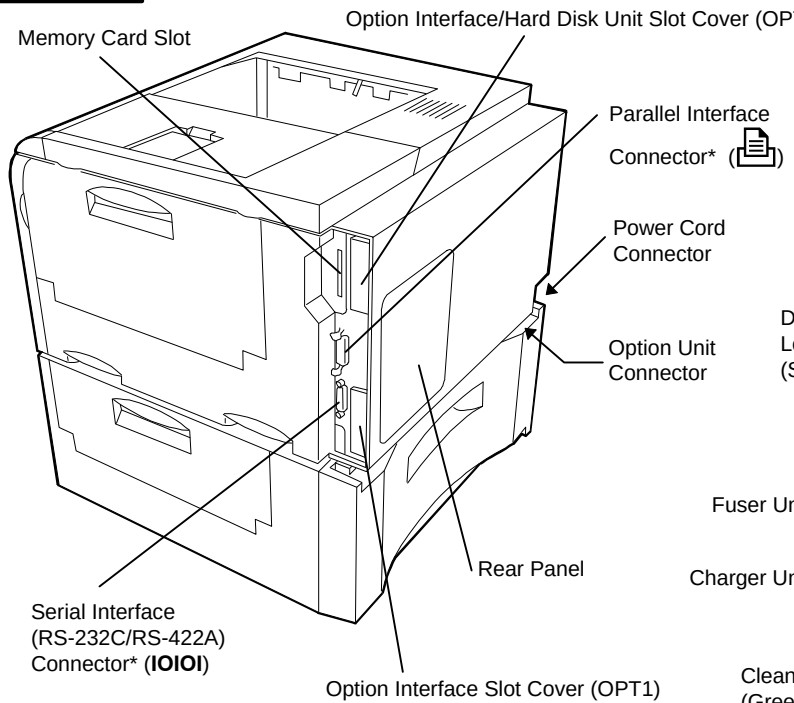
Front View/Side View





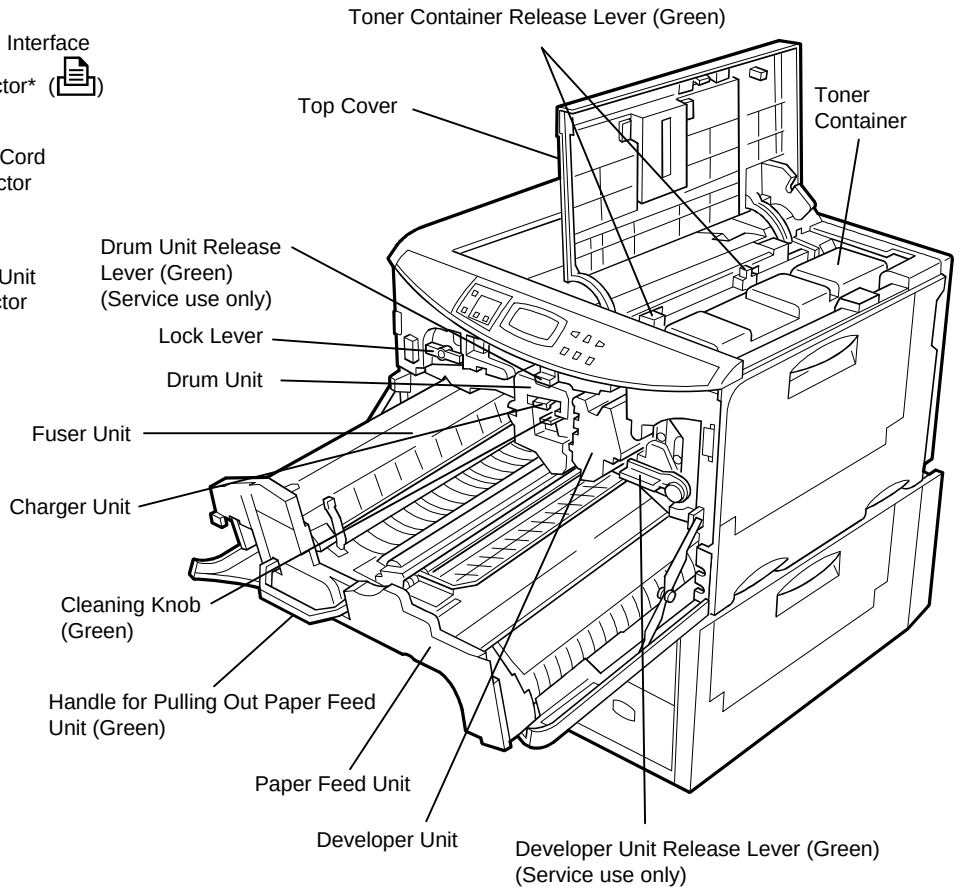
* To prevent static electricity, be sure to cover the optional feeder connector not being used with the protective caps supplied with the printer.

Rear View



* To prevent static electricity, be sure to cover interface connectors not being used with the protective caps supplied with the printer.

Interior View



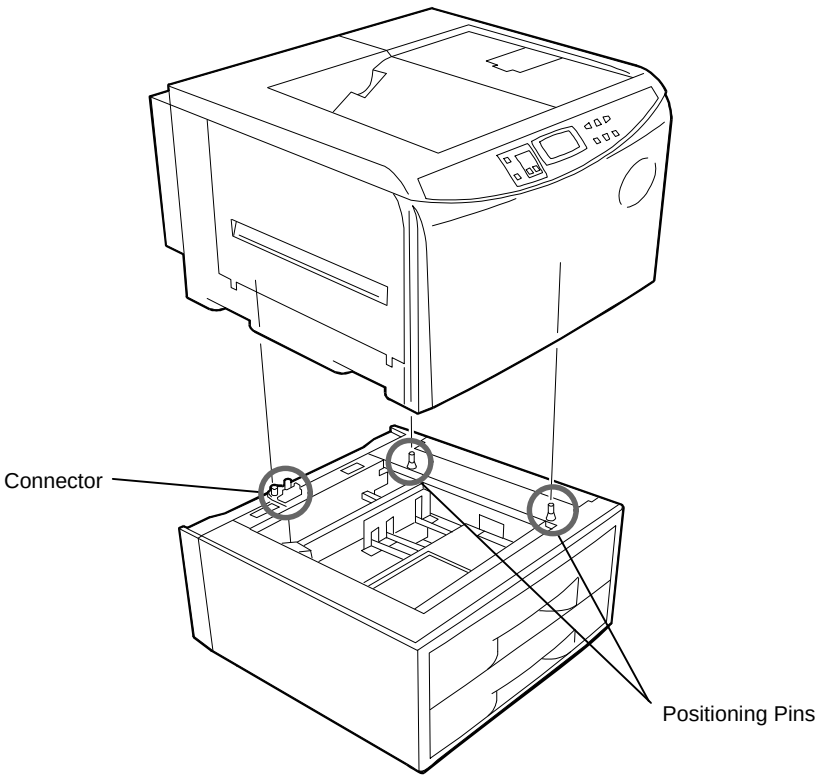
Setup and Connections

Set up the printer according to the following steps.

1. Install the printer on the paper feeder. ..... Page 1-14
2. Open the top cover. ..... Page 1-15
3. Install the toner container. ..... Page 1-16
4. Close the top cover. ..... Page 1-19
5. Adjust the paper guide on the paper feed cassette. ..... Page 1-19
6. Add paper. ..... Page 1-22
7. Open the paper stopper on the face-down tray (if required). ..... Page 1-24
8. Open the face-up output tray (when the tray is being used). ..... Page 1-24
9. Connect the printer to the computer. ..... Page 1-25
10. Attach the power cord. ..... Page 1-27
11. Test the printer. ..... Page 1-28
12. Test the interface with the computer. ..... Page 1-29
13. Install the printer driver. ..... Page 1-30

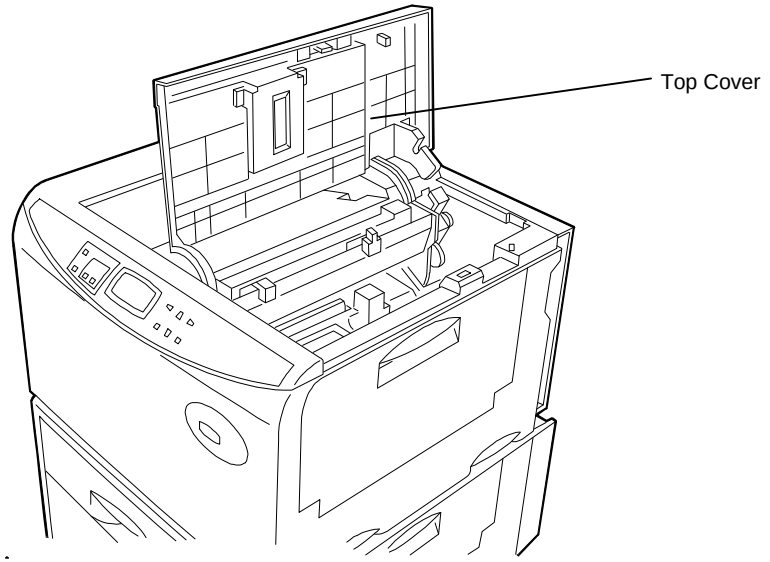
1. Install the printer on the paper feeder.

Align the installation holes on the bottom of the printer with the positioning pins on top of the paper feeder and slowly lower the printer into place. Check that the connector on top of the paper feeder is properly connected to the connector on the bottom of the printer. Casters (CA-30) capable of being mounted on the paper feeder are available as an option.



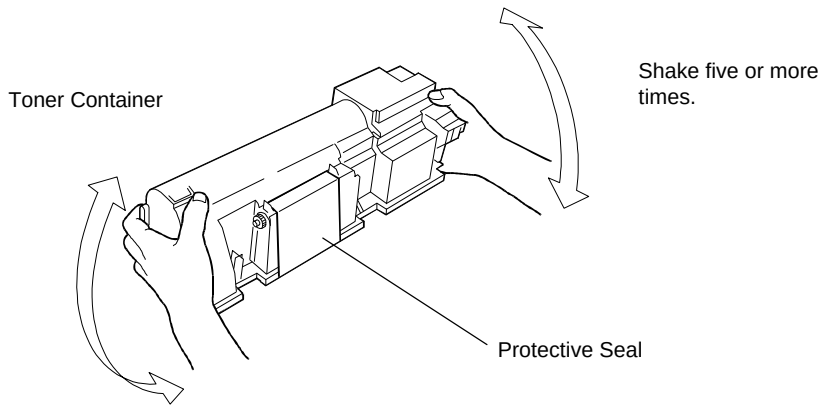
2. Open the top cover.

Remove the packing tape stuck to the printer and gently lift the top cover as far as it will go.

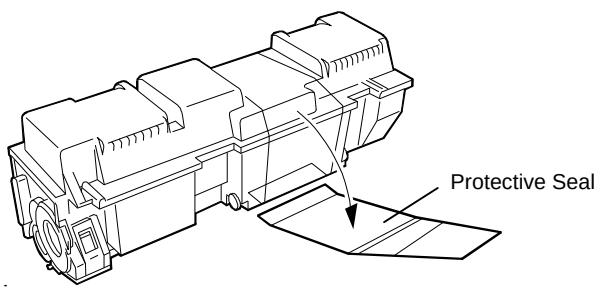


3. Install the toner container.

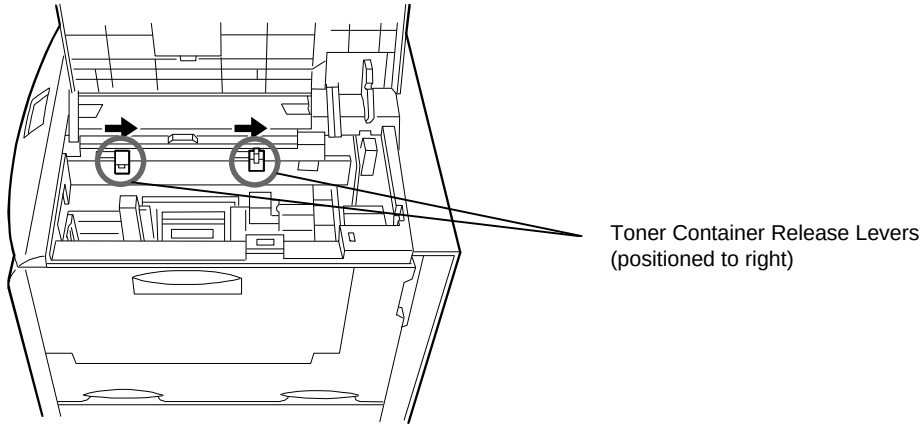
1. Take the toner container from the toner kit. Shake the toner container with the protective seal facing up as shown in the figure five times or more to thoroughly mix the toner inside.



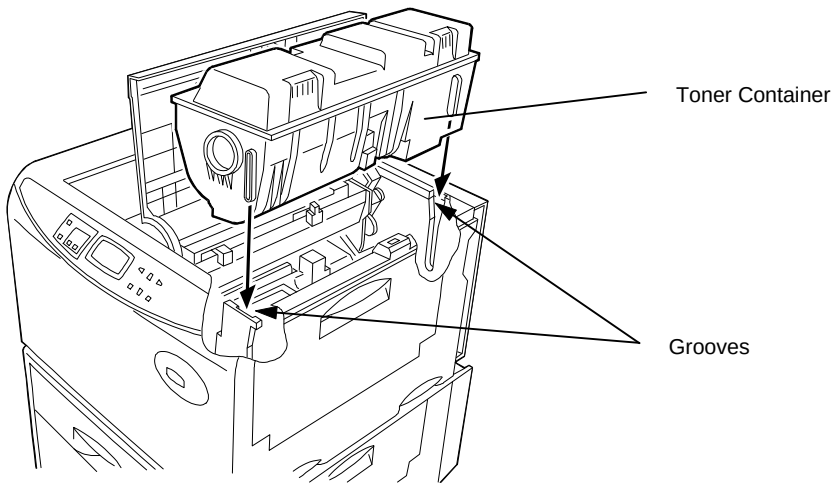
2. Carefully peal off the protective seal.



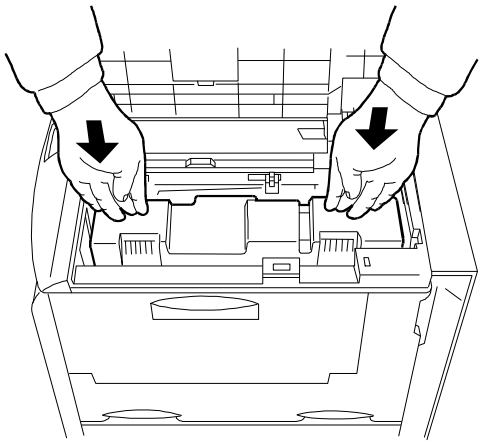
3. Check that the two toner container release levers are positioned to the right (released) as shown in the figure. If not positioned to the right, slide them to the right until they stop.



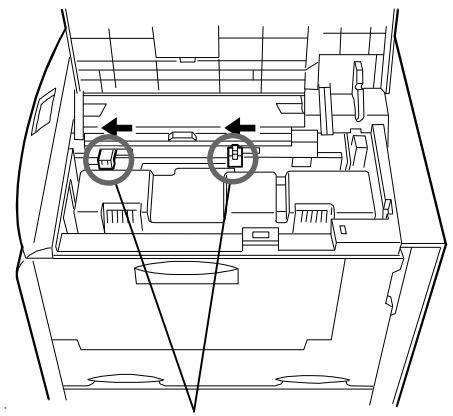
4. Align the ends of the toner container with the grooves to the left and right inside the printer as shown in the figure and install.



5. Check that the toner container is installed in the correct position, and push forcefully on the top of the toner container.



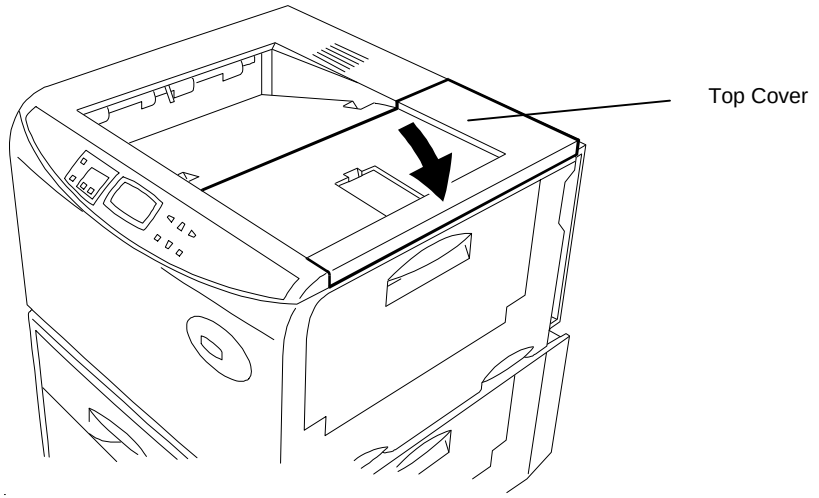
6. After the toner container is installed, set the two toner container release levers to the left position (fixed).



Toner Container Release Levers
(Be sure to set to the left and fix the container in place.)

4. Close the top cover.

Close the top cover.



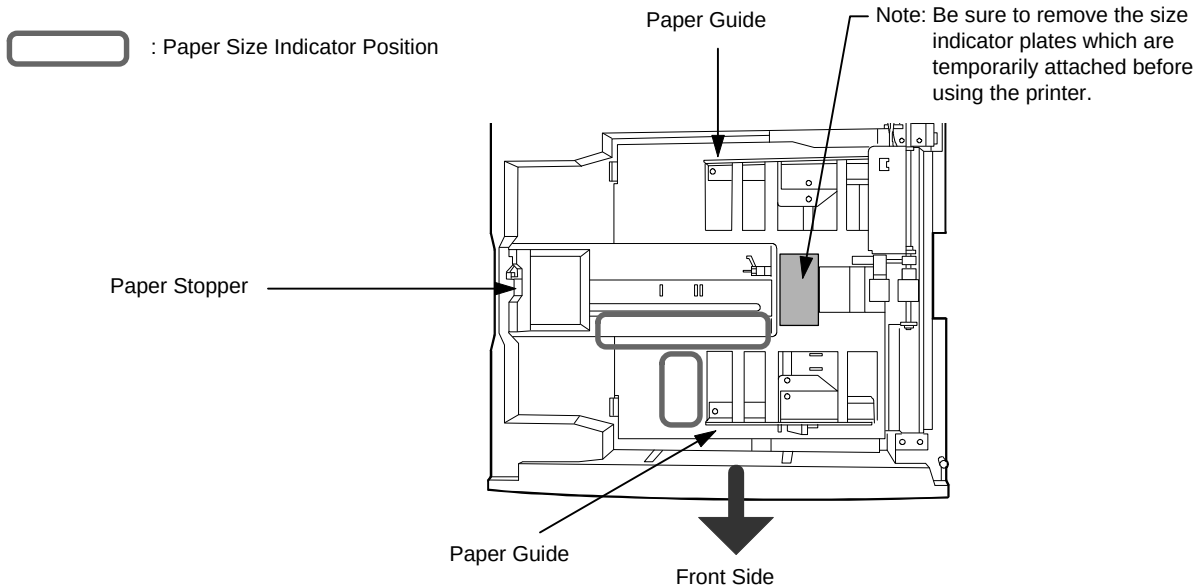
5. Adjust the paper guide on the paper feed cassette.

The paper feed cassette attached to the paper feeder located at the bottom of the printer can be used to supply standard paper from A5 size up to ledger size by adjusting its paper guide and paper stopper position. The paper feed cassette is shipped from the factory set to A4 or letter.
The positions for each paper size are indicated inside the paper feed cassette.

Note

A4 and letter size can only be fed in the landscape direction.

Paper feed cassette position

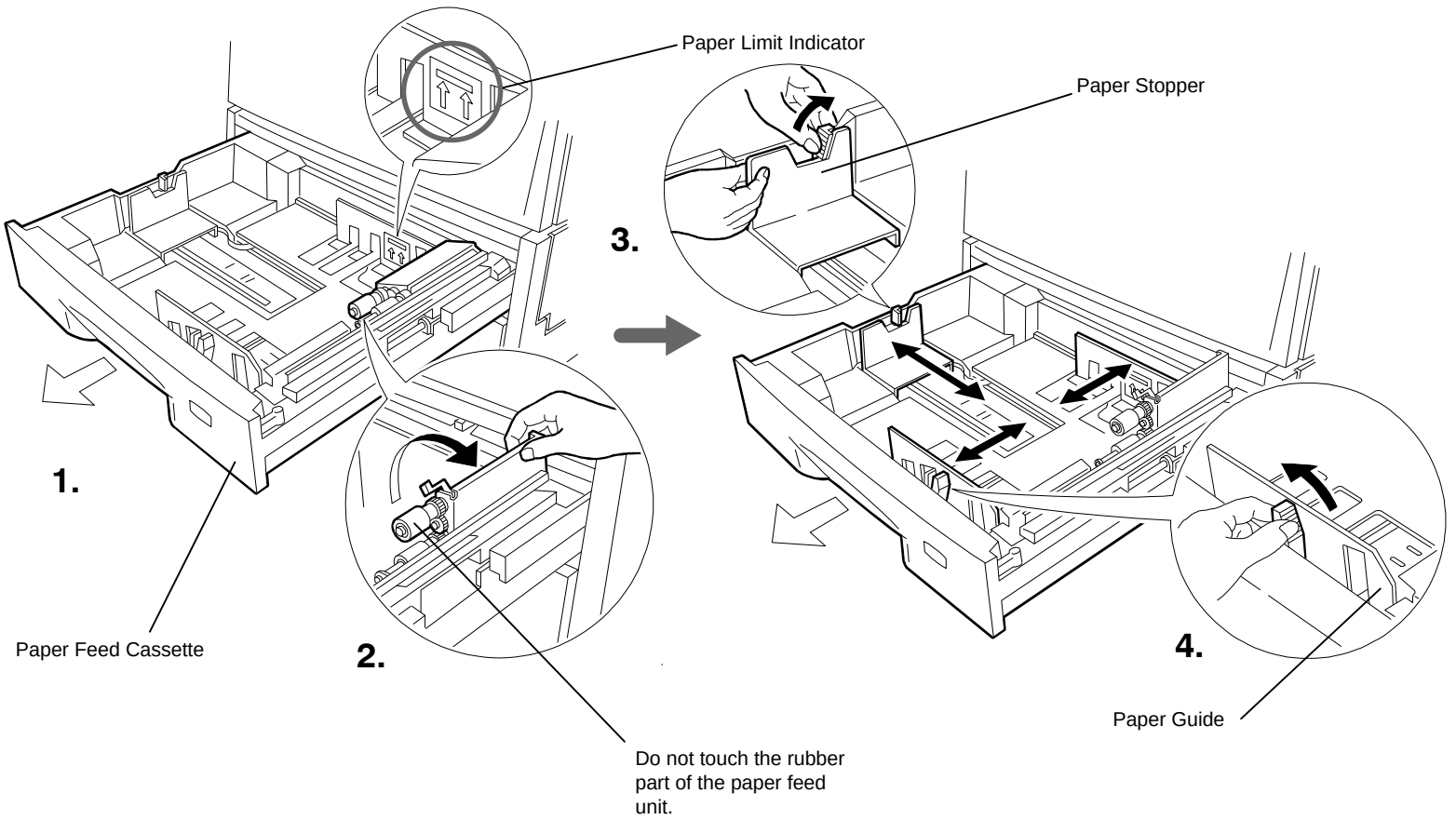

: Paper Size Indicator Position
Paper Guide
Note: Be sure to remove the size indicator plates which are temporarily attached before using the printer.
Paper Stopper
Paper Guide
Front Side

1. Pull out the paper feed cassette until it stops.

2. Open the paper feed roller located on the right side of the cassette until it stops as shown in the figure.

3. Next, adjust the position of the paper stopper located on the left side of the cassette. While holding down the lever (green) on the paper guide, slide the paper stopper to the desired paper size.

4. Adjust the position of the paper guides located at the front and rear of the paper feed cassette. Align the paper guides to the desired paper size by pressing the knobs (green) on the paper guides so they slide.

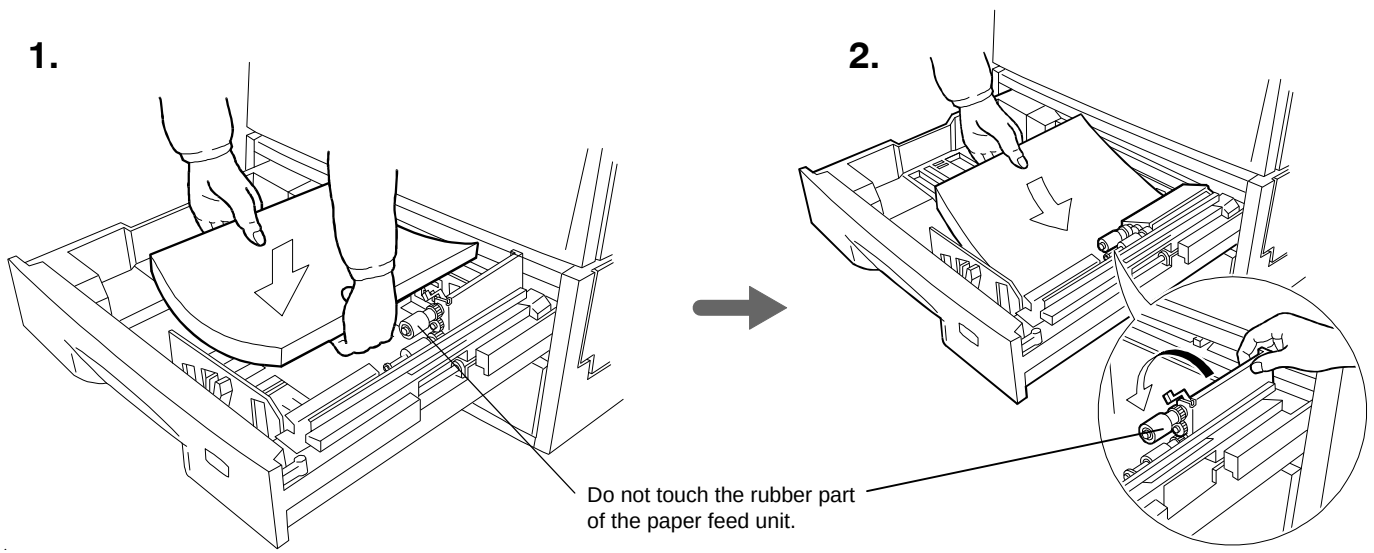

Paper Limit Indicator
Paper Stopper
1.
2.
3.
4.
Paper Feed Cassette
Do not touch the rubber part of the paper feed unit.
Paper Guide

6. Add paper.

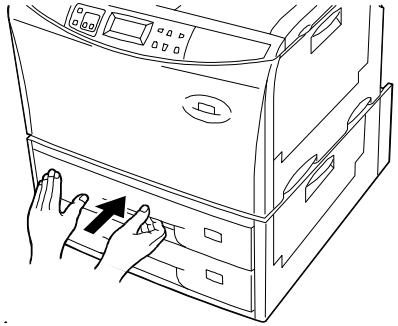
Try as much as possible to use fresh paper which has just been opened. Paper which has been stored long periods contains moisture and may result in sheets sticking together and/or paper jams. For specifications on the paper which can be used with this printer, please refer to **Appendix B Paper Selection**.

1. Square the edges of the paper and insert into the paper feed cassette as shown in the figure. Be sure that the paper does not exceed the paper limit indicators located on the left and right of the paper guide (see previous page). The paper feed cassette can hold up to about 500 sheets (0.1 mm thickness per sheet). Printing is performed on the underside of the paper.

2. Return the opened paper feed roller to its original position.

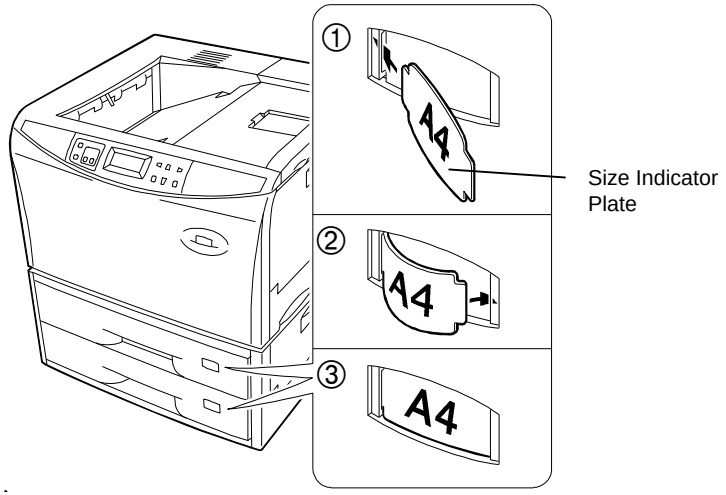


3. Close the paper feed cassette.



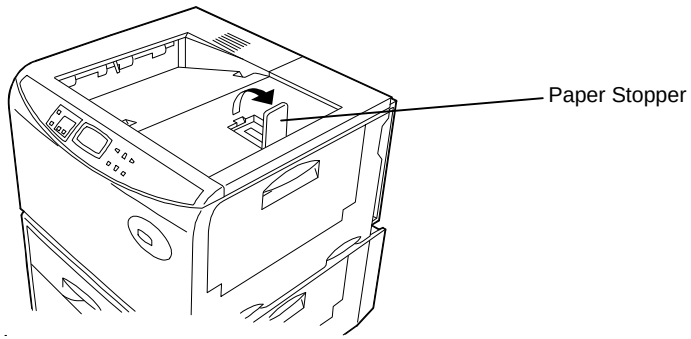
Paper is added to the second paper feed cassette in the same way.

4. Size indicator plates are also supplied. Place these on the front of the cassette according to the paper size inside to make it easy to know the current paper size.



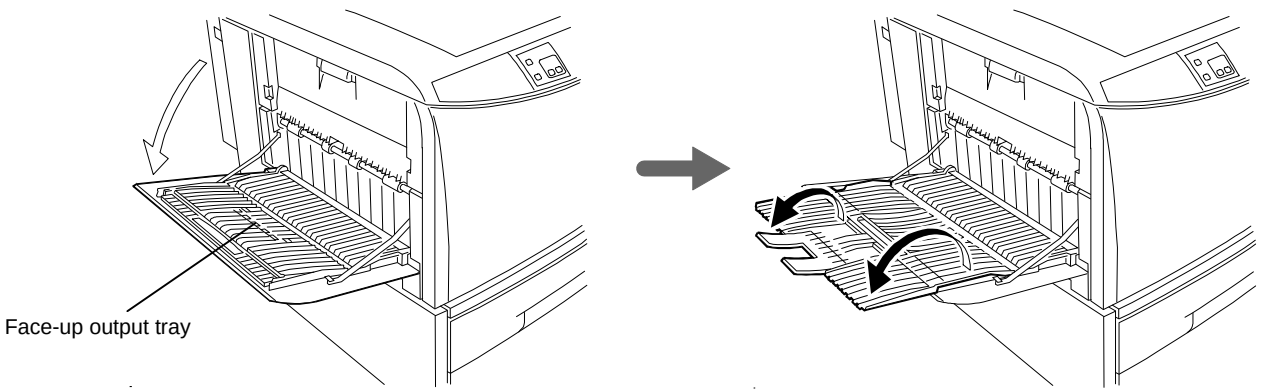
7. Open the paper stopper on the face-down tray (if required).

Raise the paper stopper on the face-down tray.



8. Open the face-up output tray (when the tray is being used).

Use the face-up output tray when you wish paper to be stacked with the printed side facing up (reverse order). The face-up output tray is located on the left side of the printer. Use it by opening as shown in the figure.

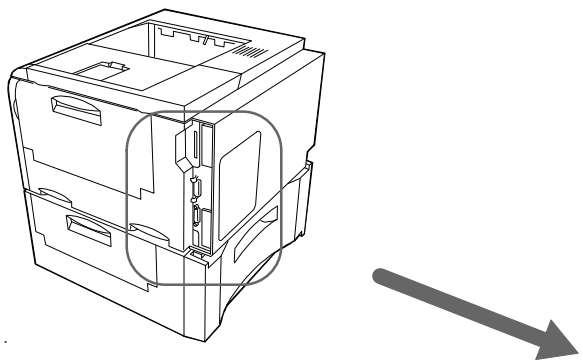


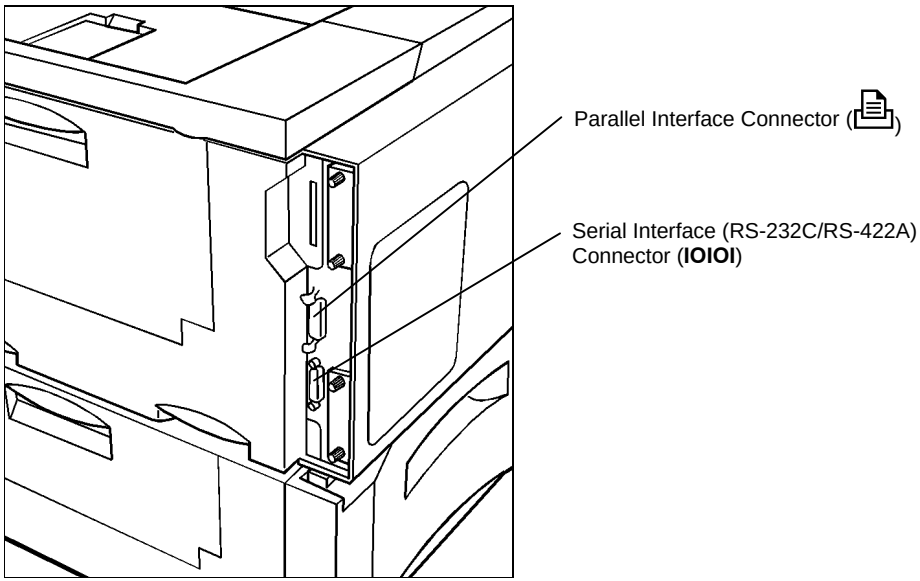
9. Connect the printer to the computer.

CAUTION

Before performing this step, be sure to turn off the printer's power switch and unplug the power plug from the power outlet. Failure to do so may result in electric shock.

A standard Centronics parallel interface connector (🖹) and RS-232C/RS-422A serial interface connector (**IOIOI**) are located on the rear side of the printer. For pin connections, please refer to **Appendix C**.

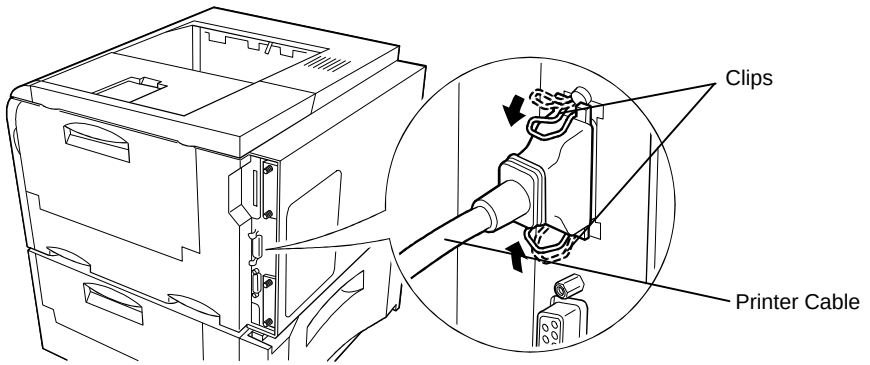




Parallel Interface Connection

1. Plug one end of the printer cable into the connector on the printer marked with a (parallel) symbol.

2. Close the clips on both sides to fix the connector in place.



3. Plug the other end of the printer cable into the computer's parallel (Centronics) interface connector. This connector is usually marked PRINTER. For details, please refer to the hardware manual for the computer.

Serial Interface Connection

The printer is shipped from the factory with its serial interface set to RS-232C mode, but it can also be set to RS-422A mode in accordance with how it will be used. For details, please refer to **Appendix C**.

1. Plug one end of the cable into the connector marked **IOIOI** on the printer.

2. Tighten the screws on both sides securely.

3. Plug the other end of the cable into the computer's serial interface connector. For details, please refer to the hardware manual for the computer.

10. Attach the power cord.

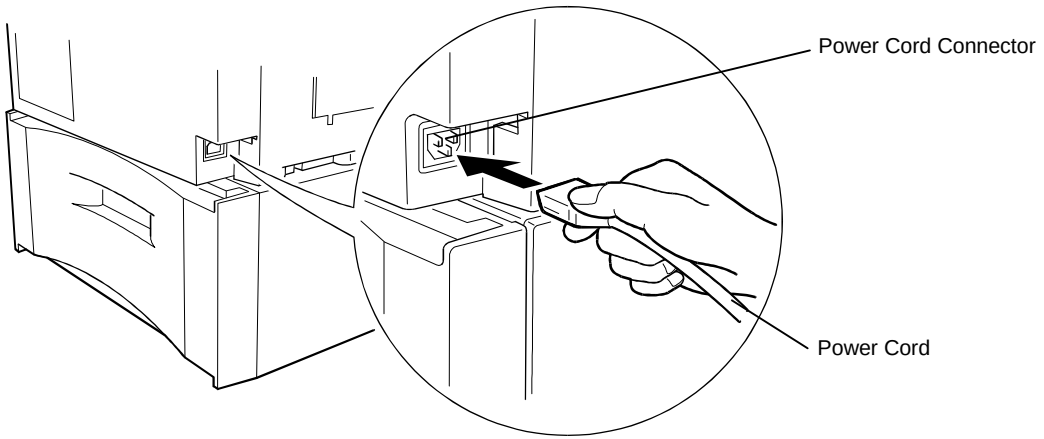
CAUTION

Be sure the printer's power switch is turned off.

Note

Only use the power cord supplied with the printer.

1. Plug the power cord into the power cord connector on the rear side of the printer.



2. Connect the other end of the power cord into a power outlet.

WARNING

Be sure to connect the ground wire of the printer to ground.

11. Test the printer.

Use the following procedure to test the printer and print out a status page indicating factory settings. For details on the indicators and keys on the printer's control panel, please refer to **Chapter 2 Control Panel**.

1. Turn on the printer's power switch.

It does not matter whether the computer's power is on or off. `Self test` will be displayed in the message display of the printer.

Notes

- When the printer's power is turned on after a toner container has been installed for the first time, the printer will display the message `Please wait` for about five minutes until it becomes ready for printing (`Ready`). Note that the printer is not broken.
- An error message of the form `XXX Open` will be displayed in the printer's message display unless all covers on the printer are properly closed. If this happens, check that the part indicated in the error message is properly closed.

2. Wait until the ON LINE indicator lights and `Ready` appears in the message display.

If the ON LINE indicator is off, make it light by pressing the **ON LINE** key.

3. Press the **STATUS** key. Information such as the memory allocation currently set for the printer will be printed on a page in a list.

If the status page prints without problems, you can tell that the developer unit and paper feed cassette are installed properly. For details on the contents of the status page, see **Chapter 2**.

12. Test the interface with the computer.

In order to check that the printer and the computer are properly connected you must print by sending an actual command from the computer.

1. Turn on the printer's power switch and turn on the computer's power as well.

2. Wait until the message display switches from `Self test` to `Ready`.

3. Check that the ON LINE indicator is lit. If it is not lit, make it light by pressing the **ON LINE** key.

4. Enter and execute the following command at the DOS prompt on the computer screen.

```
ECHO !R! STAT; EXIT;>PRN
```

If this causes the printer to print a status page (a page on which current printer settings are printed), then the printer and computer are properly connected. If this does not print a status page, check that the printer cable is properly connected. The cable or one of the connectors may also be broken.

Notes on Application Software

The computer and printer have been successfully connected by the procedures up to this point. In order to print from software run on the computer, it is necessary to install a printer driver on the computer to which the printer is connected. After the printer driver is installed, be sure to make proper printer settings from within the software.

13. Install the printer driver.

A CD-ROM containing a printer driver for Windows (Windows 3.1, Windows 95/98 and Windows NT 3.51/4.0) is supplied with this printer. Once this printer driver is installed on the computer, it is possible to make various settings for this printer from within Windows applications. It is also possible to control options and printing from within Windows.

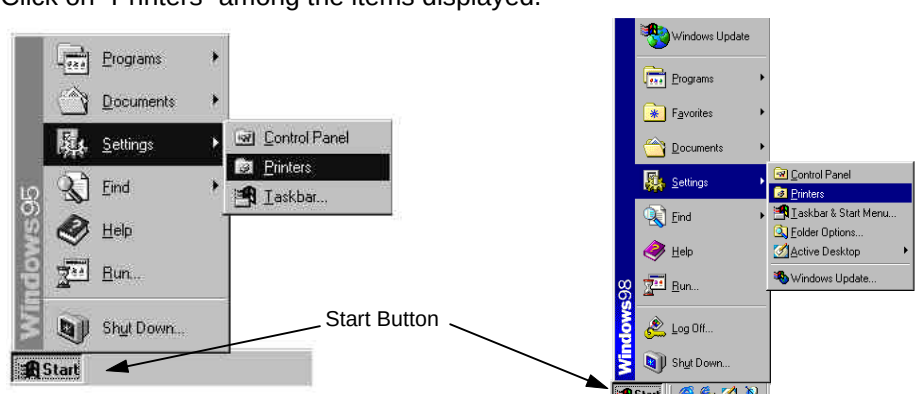
For each of these operating systems, the printer driver is located in the folder on the CD-ROM. The steps for installing this driver are given below. Read this in conjunction with the manual supplied with Windows.

For details on how to install the printer driver under Windows NT, read the file README.TXT in the CD-ROM's root directory.

Installing Under Windows 95/Windows 98

1. Insert the supplied CD-ROM (Kyocera Digital Library) into the CD-ROM drive of the computer.

2. Click on “Start” with the mouse on the Windows95/98 Task Bar, and align the cursor with “Settings.” Click on “Printers” among the items displayed.



3. The printer folder will open. Double click on “Add printer.”

Windows 95

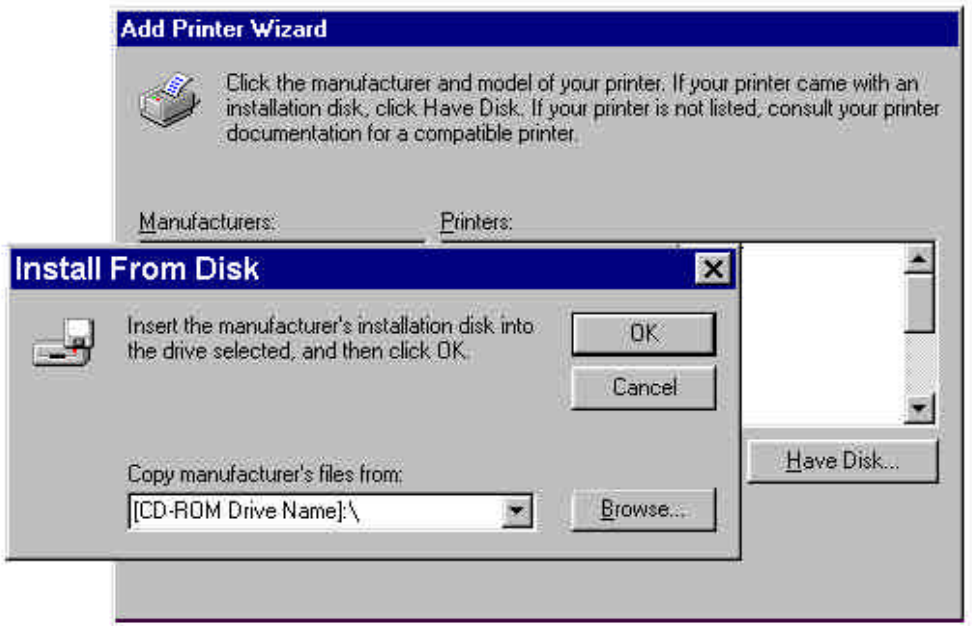
Windows 98

4. The Printer Wizard screen will appear. Click on “Next >.”

5. A screen for selecting the printer to be connected will appear. Select the most appropriate printer and click on “Next.”

6. Next, “Click the manufacturer and model of your printer....” screen will appear. At this point, select “Have Disk…” located at the lower right. (See the figure for **Step 7**.)

7. A screen for installing from floppy disk will appear. Enter “[CD-ROM Drive Name]:\” as the source from which to copy the file and click on “OK.”


Add Printer Wizard
Click the manufacturer and model of your printer. If your printer came with an installation disk, click Have Disk. If your printer is not listed, consult your printer documentation for a compatible printer.
Manufacturers:
Printers:
Install From Disk
Insert the manufacturer's installation disk into the drive selected, and then click OK.
OK
Cancel
Copy manufacturer's files from:
[CD-ROM Drive Name]:\
Browse...
Have Disk...

8. Select “Kyocera FS-7000+,” click on “Next >,” and follow the on-screen instructions to install. Once the driver has been properly installed, a Kyocera printer icon will be added to the printers folder.

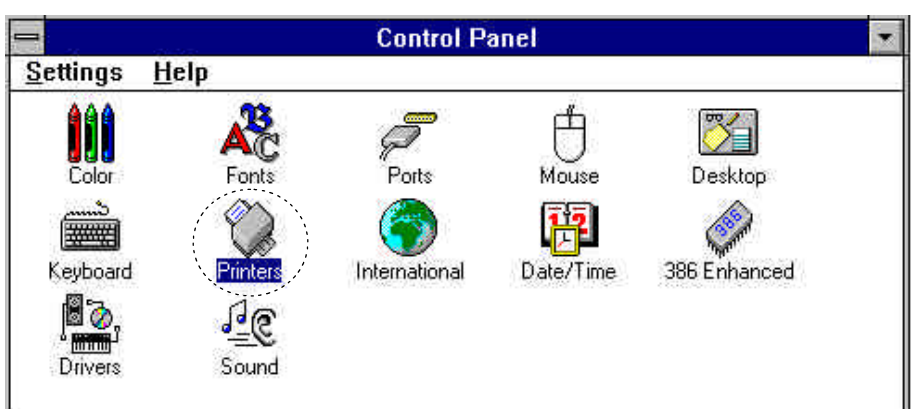
Note

When printing under Windows 95/98, be sure to set the emulation of this printer to HP LJ 5M/5Si (default setting).

Installing Under Windows 3.1

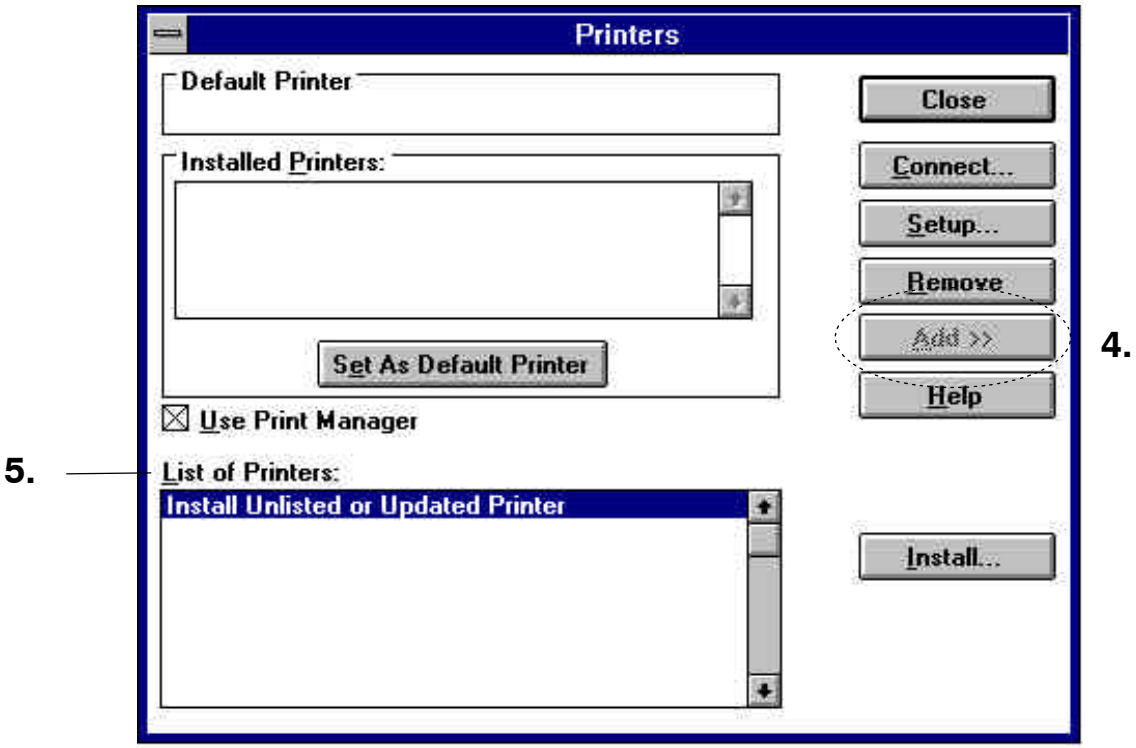
1. Insert the supplied CD-ROM (Kyocera Digital Library) into the CD-ROM drive of the computer.
2. Double click on the “Control Panel”.

3. Double click on “Printers.”



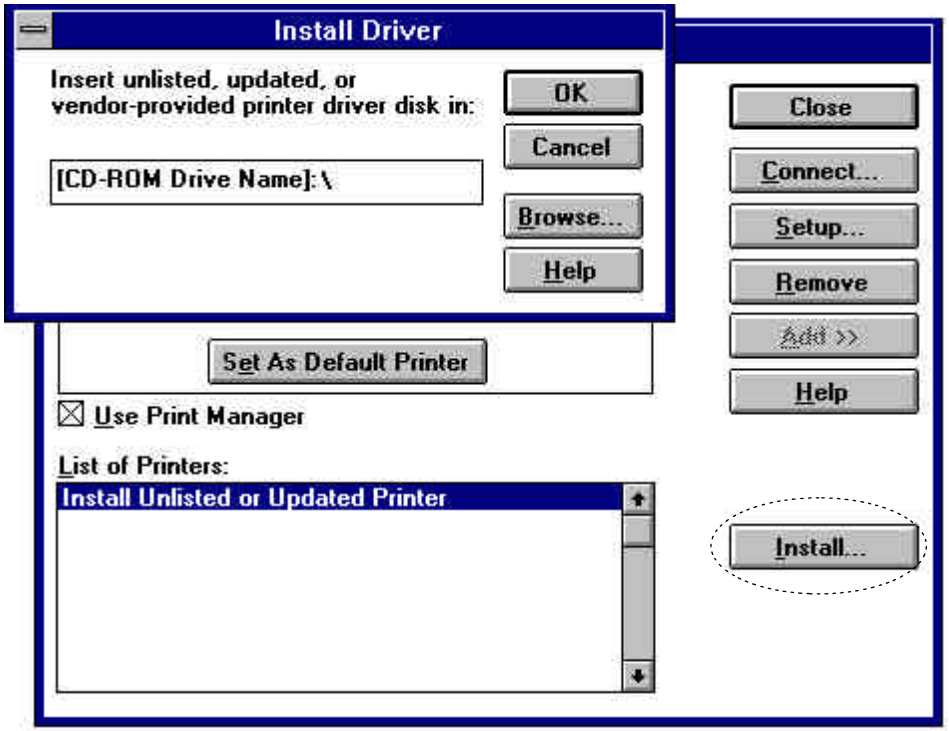
4. Click on “Add >>.”

5. A screen for “List of Printers:” will appear. From the choices, click on “Install Unlisted or Updated Printer.”



6. Click on “Install….”

7. The install printer menu will appear. Enter “[CD-ROM Drive Name]: \” and click on “OK.”



8. Select “Kyocera FS-7000+” from the printers displayed and click on “OK.” Once the driver has been installed, close the Control Panel by clicking on “Close.”

The Multi-Purpose Tray

The multi-purpose tray is incorporated on the right side of the printer. It can be used in one of two modes: first mode or cassette mode. The multi-purpose tray can hold about 100 sheets of paper (0.1 mm thickness).

First Mode (Automatic Manual Feeding)
The printer automatically feeds any paper placed on the multi-purpose tray even if another paper source is selected. After all paper in the multi-purpose tray is printed, paper will be fed from the paper source originally set. (This is the factory set default.)

Cassette Mode
Approximately 100 sheets of paper can be continuously fed.

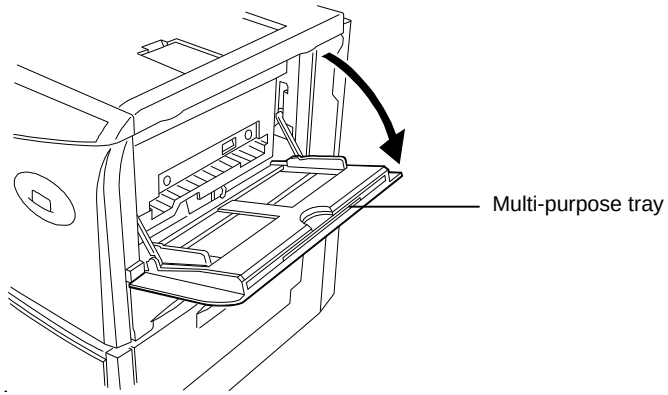
For details on paper which can be used with this printer, please refer to **Appendix B**.

If first mode is set with the multi-purpose tray as the current cassette, printing is carried out using custom size paper feed timing regardless of the size setting for the multi-purpose tray.

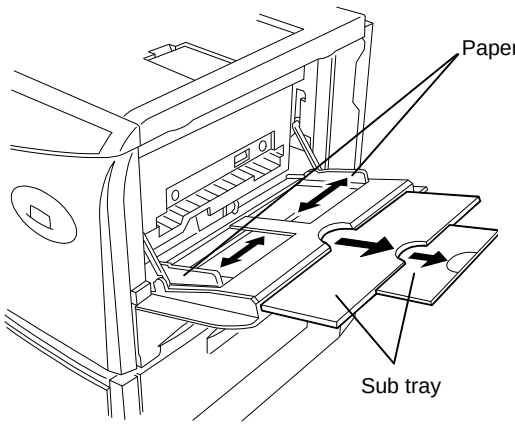
Duplex printing from the Multi-Purpose Tray
In first mode, be sure to set the MP tray to the same paper size, paper type and feed direction as set for the current cassette. If the paper size, type or feed direction differs, a paper jam may result. Also note that it is not possible to select the multi-purpose tray as the current cassette and perform duplex printing. We therefore recommend that duplex printing be performed from the paper cassette. An optional duplex unit is required to perform duplex printing.

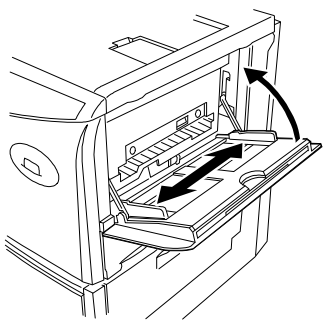
Feeding from the Multi-Purpose Tray

1. Open the multi-purpose tray as shown in the figure.



2. Open the sub tray and adjust the paper guides according to the width of the paper to be fed.





Note: The paper guides must be set to the widest position when closing the multi-purpose tray.

3. Check that the message `Ready` is displayed in the printer's message display, and that the ON LINE indicator is lit.

4. Set the paper source to the multi-purpose tray by pressing the **FEED** key until the message display indicates `MP tray`. The multi-purpose tray indicator on the control panel will flash, and `Add paper` will be displayed.

5. Press the **MODE** key. Then use **+** or **–** keys to display `Paper handling >`.

6. Press the ▸ (**Form Feed**) key to display `>MP tray size` or `> MP tray type`, then press the **ENTER** key so you can set the paper size or type to be fed from the multi-purpose tray. See **Mode Select Menu** at the end of this manual.

The manner in which paper is fed in each of these modes is explained below.

First mode

1. Press the **MODE** key. Then use **+** or **–** keys to display `Paper handling >`.

2. Press the ▸ (**Form Feed**) key to display `>MP tray mode`.

3. After pressing the **ENTER** key, the mode display is changed by pressing the **+** and **–** keys. Display `First` and then press the **ENTER** key.

   ```
   >MP tray mode
    First
   ```

4. Press the **EXIT** key.

Note

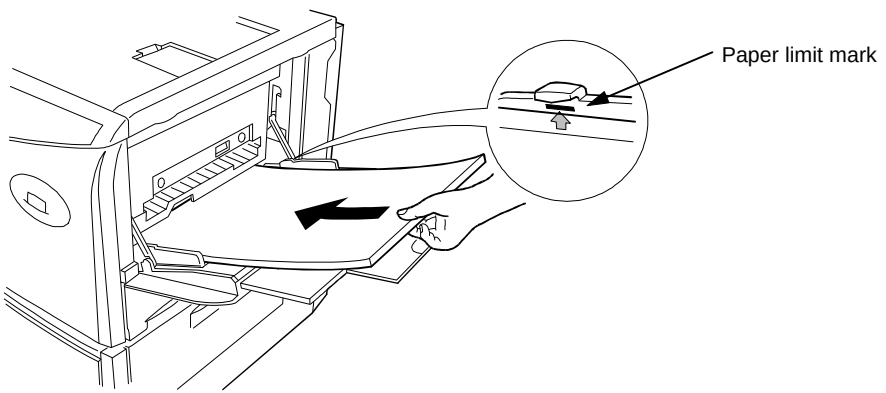
In this mode, the paper source indicator on the control panel does not change while paper is being fed from the multi-purpose tray.

Cassette Mode

1. Press the **MODE** key to display `Paper handling >`.
2. Press the ▸ (**Form Feed**) key to display `>MP tray mode`.
3. After pressing the **ENTER** key, the mode display is changed by pressing the **+** and **–** keys. Display `Cassette` and then press the **ENTER** key.

   ```
   >MP tray mode
    Cassette
   ```

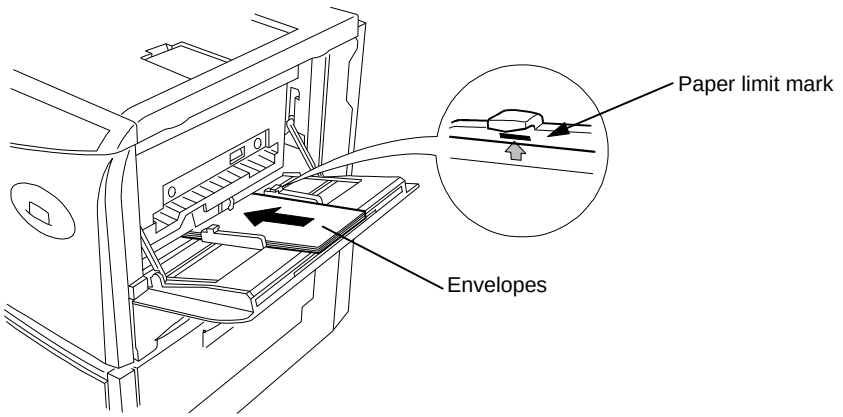
4. Press the **EXIT** key.
5. Insert the paper so that it is aligned straight in the tray as far as it will go. About 100 sheets (0.1 mm thickness, 80 g/m^2) can be inserted at one time. Do not load paper above the paper limit mark.



6. `Ready` will appear on the message display.

Feeding Envelopes

Envelopes should be fed face up. Be sure to set the print direction from the Mode Select Menu. Insert the envelopes in the tray as far as they will go. Do not load envelopes above the paper limit mark.



For details on suitable envelope paper quality and shape, see **Appendix B**. Be sure to use suitable envelopes as print quality may be reduced.

For the envelope sizes which can be used with this printer, see the table on page 2-5.

Expanding Memory

The printer comes standard equipped with 8 MB of main memory. However, more complex pages can be printed and processing speed increased by expanding the printer's memory. There are two slots available in the printer for expanding memory. Printer memory can be expanded to up to 72 MB by installing optional extended memory chips (SIMMs) in these slots.

Note

The expansion memory should be installed only by a Kyocera authorized dealer or Kyocera certified technician. Kyocera shall not be liable for damage due to improper installation of the expansion memory.

Memory Required by the Printer Environment

It may be necessary to extend memory depending on the operating environment of the printer. Please refer to the table below for minimum memory requirements in various environments.

Printing Environment	Minimum Memory Required	
	Resolution: 300 dpi	Resolution: 600 dpi
HP LJ 5M/5Si (factory setting)	8 MB	8 MB
HP LJ 5M/5Si, duplex mode = on*	8 MB	8 MB
HP LJ 5M/5Si, duplex mode = off Resource protection	—	10 MB
HP LJ 5M/5Si, duplex mode = on* Resource protection	—	14 MB
KPDL, duplex mode = off	8 MB	8 MB
KPDL, duplex mode = on	8 MB	12 MB

*An optional duplex unit (DU-30/DU-31) is required for duplex printing.

Note

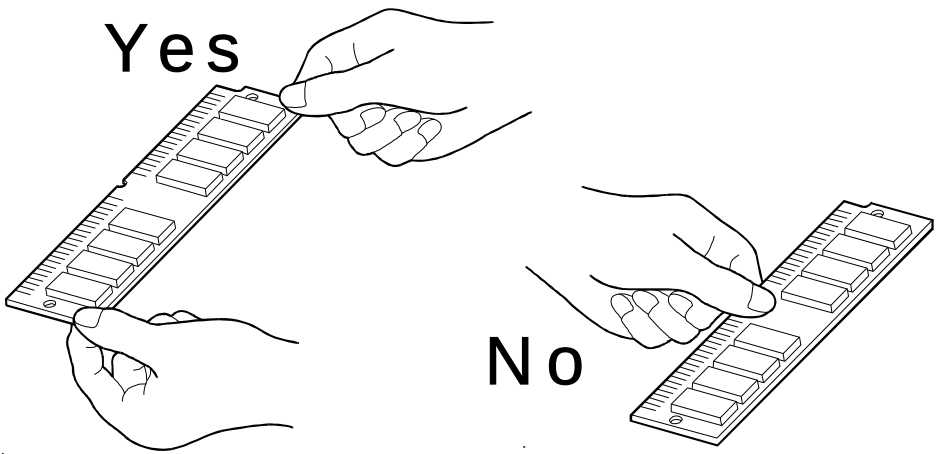
When printing on paper larger than A4 size, it may be necessary to extend memory depending on the size of data to be printed.

The description given below is intended for service personnel.

Precautions on the Handling of Extended SIMMs

Static electricity which may accumulate in the human body through walking on carpets or other such surfaces is the enemy of SIMMs loaded with many semiconductor chips. Pay attention to the following things before installation to protect memory chips against damage from static electricity.

- Do not remove the SIMMs from their anti-static bag until immediately prior to installation.
- Eliminate any static electricity from your body through grounding before touching the SIMMs.
- Be absolutely sure when handling the SIMMs to hold them by the substrate without touching the printed connector section.



Installing SIMMs

Insert the SIMM or SIMMs into the dedicated sockets on the printer's main board.

WARNING

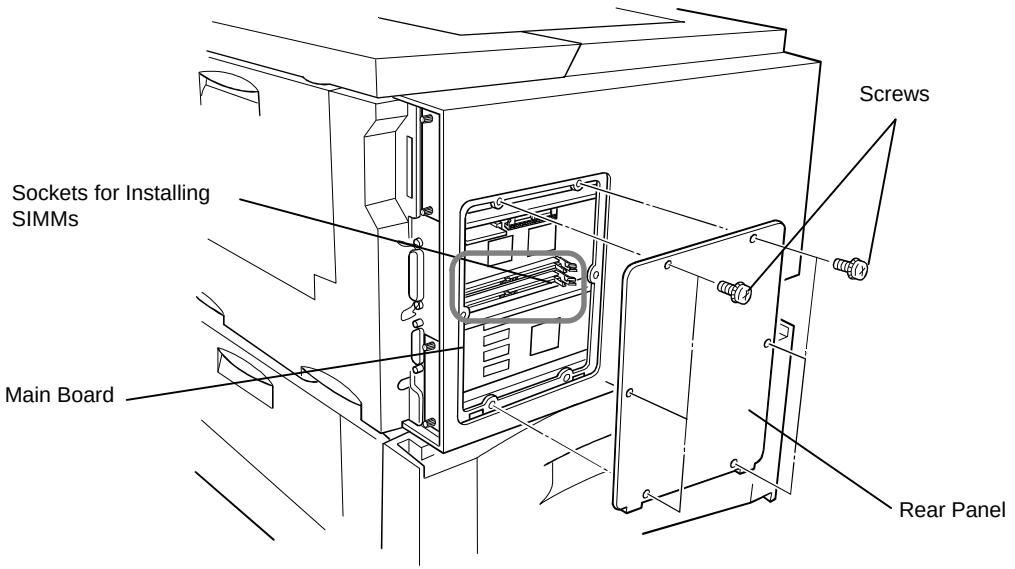
Take precautions that no foreign substances such as metal chips or liquid get inside the printer during the installation process. Operation of the printer during the presence of a foreign substance may lead to fire or electric shock.

CAUTION

Be sure to turn off the printer's power and disconnect all cables when installing SIMMs in the printer. Failure to do so may lead to electric shock.

1. Turn off the printer's power and disconnect the power cord and all cables connected to the printer.

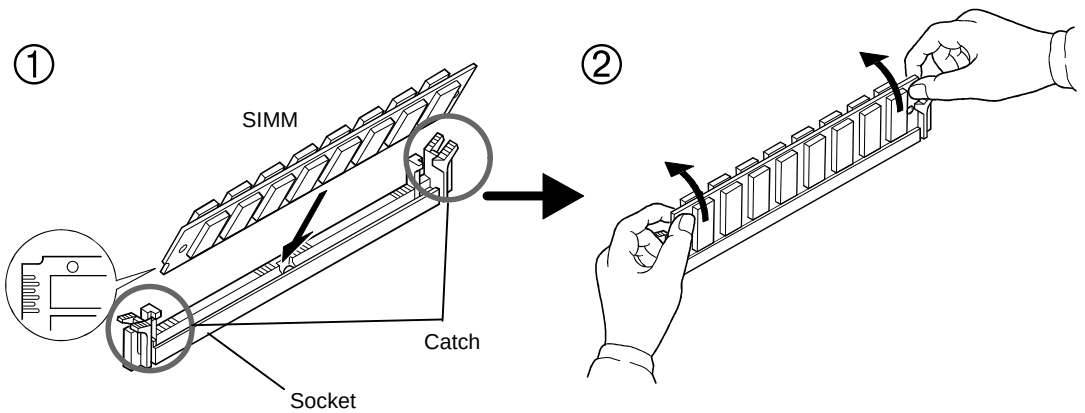
2. Remove the six screws on the printer's rear cover, and remove the rear panel. There are two sockets for installing SIMMs located on the main board.



3. Remove the SIMM or SIMMs from the package.

① Insert the connector end of the SIMM into the socket.

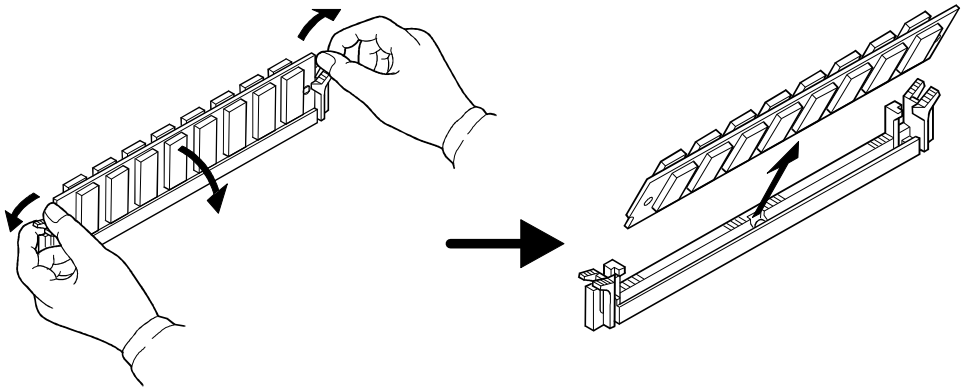
② Carefully push the board upright until it snaps into place. Make sure that the catches at the ends of the socket fit into the holes at the ends of the SIMM board.



Note

SIMMs may be installed in either slot regardless of their memory capacity.

To remove a SIMM, carefully pull the end catches slightly outwards and tilt the SIMM as shown, then pull the SIMM out of the socket.



4. After the SIMMs have been installed, reattach the rear cover on the printer and tighten all six screws securely.

After SIMMs have been installed in the printer, use the following procedure to check that installation has been performed properly.

Testing Extended Memory

1. Check that the power switch is off, plug the power cord into the printer, and turn the power on.

2. Wait for the printer's ON LINE indicator to light and the message display to read Ready, and press the **STATUS** key.

3. If installation has been performed properly, a status page will be printed. Check the **Available Memory Item** in the upper right. Information on the SIMMs installed in slot 1 and slot 2 is shown here. There is no problem if total memory has increased. (The printer is shipped from the factory with 8192 KB [8 MB] of memory.)

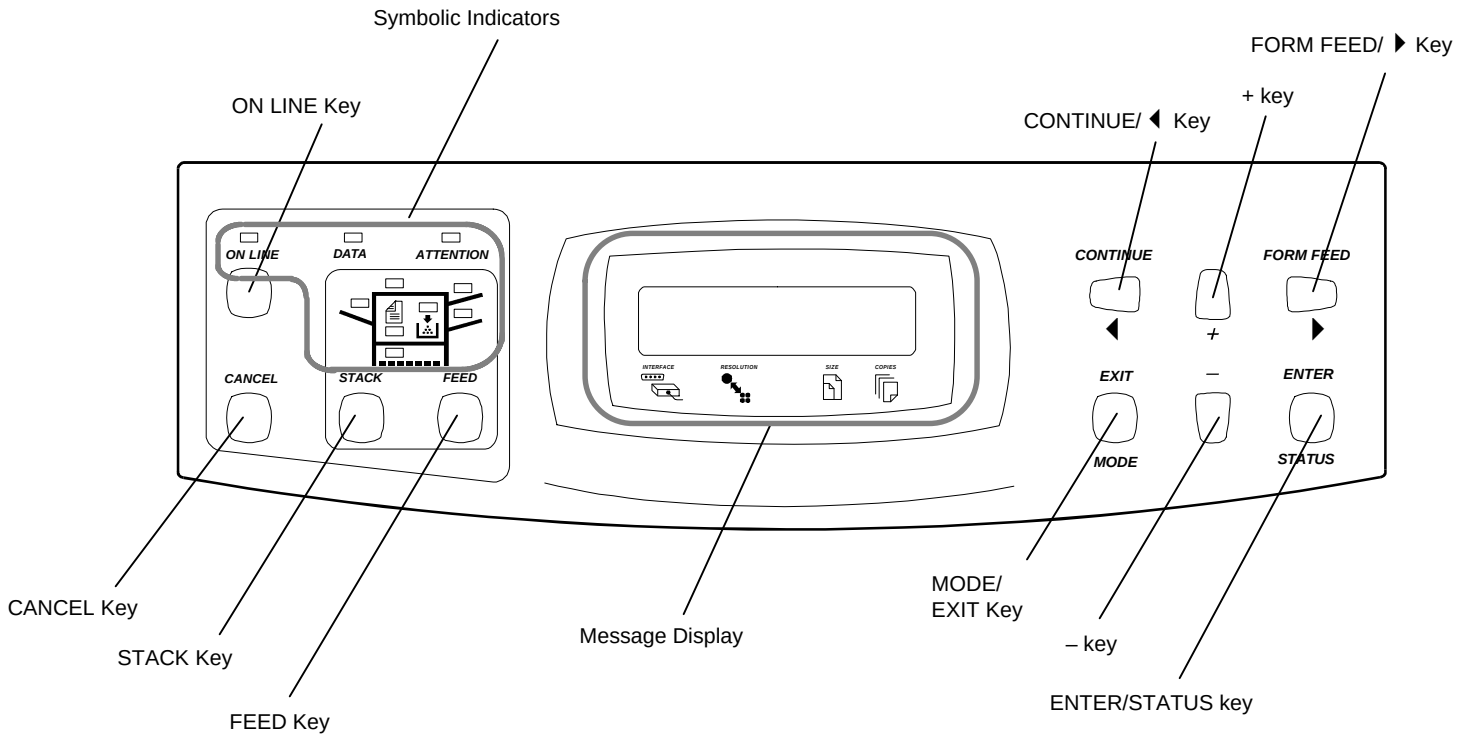
Chapter 2 Operating the Page Printer

This chapter explains the printer's control panel and operating procedures. It also covers operations which use the memory card.

Control panel 2- 2
Operating Procedures 2- 11
Mode Selection Menu 2- 24
Configuring Interfaces 2- 27
Emulation Selection 2- 28
Reduction (Page Set) 2- 29
RAM DISK 2- 32
Virtual Mail Box (VMB) 2- 34
Memory Card 2- 40
Setting the Paper Type 2- 51
Sleep Timer Setting 2- 56
Dumping Received Data 2- 57
KIR Level 2- 58
Ecoprint Mode 2- 60
Resource Protection 2- 61
Adjusting the Print Density 2- 62
Setting the Audio Warning (Buzzer) 2- 62

Control Panel

The printer control panel consists of indicators, a message display, and various keys.

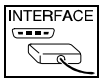


Nearly all of the printer modes set using keys on the control panel are automatically recorded within the printer, and are not lost even if power is turned off. The previous operational mode is therefore restored when the printer's power is turned on again.

Message Display

The message display displays the printer's operational mode. Messages which are displayed and their meaning are given in the table below.

Message	Meaning
Self test	The printer is self-testing and warming up after power-up and is not ready to print.
Please wait	The printer is warming up and is not ready to print.
Ready	The printer is ready to print
Processing	The printer is processing print data or in the middle of printing.
Waiting	The last page remains unprinted. The printer waits awhile and eventually generates a form feed allowing the last page to be printed. (The length of time depends on the form feed timeout setting.) The printing will begin immediately when the **Form Feed** key is pressed. If a memory card is being used this can indicate the printer is waiting for data to be written.
Sleeping	The printer is in Sleep mode. The printer wakes from Sleep mode whenever a key on the control panel is pressed, the cover is opened or closed, or data is received. The printer then warms up and goes online. (The time that it takes the printer to enter Sleep mode depends on the Sleep Timer setting.)
Cancelling data	Data inside the printer is being canceled.
FormFeed TimeOut	An automatic form feed has been generated.
Paper loading	After the paper feed cassette has been loaded into the paper feeder, the paper feed position within the cassette is being readied.



Interface Indicator

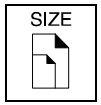
The interface indicator indicates the interface over which data is currently being received or was last received. When an optional interface such as a network interface is installed in the printer, this indicator displays the information in the table below depending on the interface used.

Display	Description
PAR	Parallel interface
SER	Serial interface (RS-232C/RS-422A)
OPT1	Optional interface 1
OPT2	Optional interface 2

These indicators will flash while the printer is receiving data and continue flashing until the interface is released even if data transmission is finished. The printer gives priority to data coming in over the interface corresponding to the blinking indicator.

Resolution Indicator

This shows the current printing resolution. Resolution is set to 600 dpi (dot-per-inch), HP LJ 5M/5Si emulation, when shipped from the factory. The printer's resolution can be selected using the mode select menu (See the menu hierarchy given at the end of this manual.).



Paper Size Indicator

The paper size indicator indicates the paper size of the cassette currently installed in the printer (factory setting is A3) or the paper size currently set for the multi-purpose tray. During printing the paper size specified by the computer in data being sent to the printer will be displayed. (For example, if the paper size in the cassette is B5 and reduced printing from A4 to B5 has been specified, B5 will be displayed before and after printing but A4 will be displayed during printing.)

The following abbreviations are used to indicate the paper sizes.

Indicator	Paper Size	Indicator	Paper Size
A3	ISO A3 (29.7 × 42 cm)	C4	ISO C4 (22.9 × 32.4 cm)*
A4	ISO A4 (21 × 29.7 cm)	C5	ISO C5 (16.2 × 22.9 cm)*
A5	ISO A5 (14.8 × 21 cm)	b5	ISO B5 (17.6 × 25 cm)*
A6	ISO A6 (10.5 × 14.8 cm)*	EX	Executive (7-1/4 × 10-1/2 inches)*
B4	JIS B4 (25.7 × 36.4 cm)		[only the multi-purpose tray feeding]
B5	JIS B5 (18.2 × 25.7 cm)	#6	Commercial 6-3/4
B6	JIS B6 (12.8 × 18.2 cm)*		(3-5/8 × 6-1/2 inches)*
LT	Letter (8-1/2 × 11 inches)	#9	Commercial 9
LD	Ledger (11 × 17 inches)		(3-7/8 × 8-7/8 inches)*
LG	Legal (8-1/2 × 14 inches)	CU	CUSTOM (11.7 x 17.7 inches)
MO	Monarch (3-7/8 × 7-1/2 inches)*	HA	Japanese Postcard (10 x 14.8 cm)*
BU	Business (4-1/8 × 9-1/2 inches)*	OH	Return Postcard (20 x 14.8 cm)*
DL	ISO DL (11 × 22 cm)*		

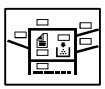
* Only when the multi-purpose tray or EF-1/UF-1 is installed.

Note

Settings made by application software have priority over settings made from the control panel.

Copy Indicator

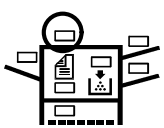
Indicates the number of copies set in the current interface (001 – 999), and the number is reduced as printing proceeds.



Indicator

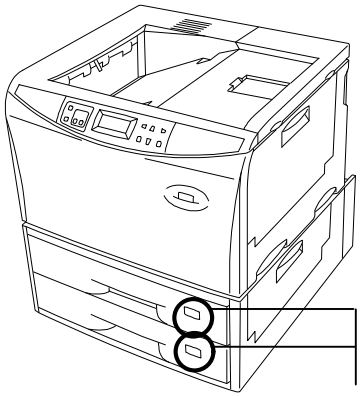
Refer to the table below for the names and meanings of indicators on the control panel.

Indicators on the Control Panel

Indicator	Name	Description
	Face-down tray indicator	Flashing: Indicates that paper is jammed near the face-down output tray. Lit: indicates when printed pages are delivered to the face-down output tray.
	Face-up tray indicator	Flashing: Indicates that paper is jammed near the face-up output tray. Lit: indicates when printed pages are delivered to the face-up output tray.
	Toner indicator	Flashing: Indicates there is insufficient toner Lit: Indicates that the printer is out of toner. Replace with a new toner container.
	Cassette feed indicator	Flashing: Indicates that the cassette is not installed properly or there is no paper in the cassette or that paper is jammed in the paper feed cassette. Lit: Indicates paper is being fed from the paper feeder (PF-30).

Indicator	Name	Description
	Multi-purpose feed indicator	Flashing: Indicates that there is no paper in the tray or that paper is jammed near the multi-purpose tray. Lit: Indicates when paper is fed from the multi-purpose feed tray.
	Optional paper feeder indicator	Flashing: Indicates that there is no paper in the optional envelope feeder (EF-1) or universal feeder (UF-1); or that paper is jammed near the paper feed opening. Lit: Indicates that paper is being fed from the optional envelope feeder (EF-1) or universal feeder (UF-1).
	Duplex printing indicator	Flashing: Indicates that paper is jammed in the optional duplex printing unit (DU-30/DU-31). Lit: Indicates that the printer is printing in duplex mode when the optional duplex printing unit (DU-30/DU-31) is installed.
 ON LINE	On-line indicator	Lit: indicates that the printer is on-line. The printer prints received data. Off: The printer is offline. The printer stores but does not print received data.
 DATA	Data indicator	Flashing: Indicates data transfer is taking place. Lit: Indicates either that data is being processed, or that data is being written to the memory card.
 ATTENTION	Attention indicator	This indicator indicates a problem that may be resolved by the user. Off: Indicates operations are normal. Flashing: Indicates that the printer needs maintenance. Check the message display for details and take appropriate action. Lit: This indicates that the printer cannot print due to no paper in the cassette or similar reason. Check the message display for details and take appropriate action.

About the LED Indicator for the Paper Feed Cassettes

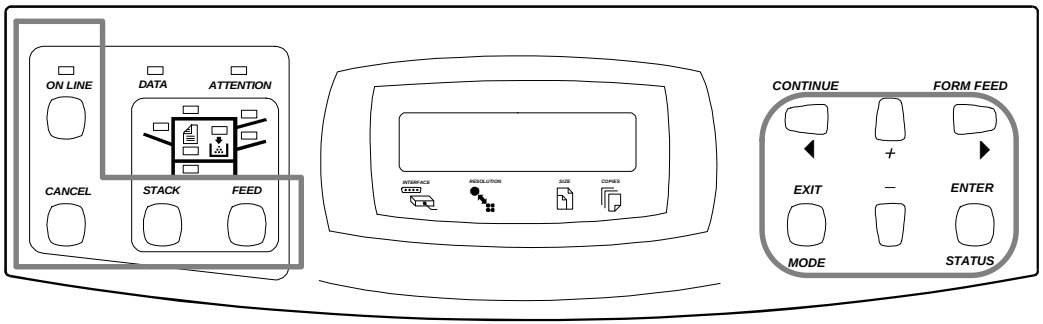


Paper size indicators

The size indicator plate on the front of the paper feed cassettes is illuminated by LED. This LED indicates the status of the cassettes as follows depending on whether it is on, off or flashing.

LED Status	Meaning
Flashing quickly	Paper feed from this cassette is jammed.
Flashing slowly	This cassette is out of paper.
Lit	This cassette is currently selected.
Out	• The cassette is not inserted properly. • The cassette is not currently selected.

Control Keys



The functions of each key are given in the table below.

Key	Function
ON LINE key	Pauses and restarts printing. Data can be sent even while printing is paused. (See page 2-16.)
CANCEL key	(1) This key can be used to cancel mode selection during mode selection or cancel printing during printing. (See page 2-17.) (2) It also cancels the alarm buzzer when it goes off. (See page 2-62.)
STACK key	This key selects whether to output paper face-down (printed side down) or face-up (printed side up). It can also select optional output locations when corresponding options are installed. (See page 2-14.)
FEED key	(1) This key selects the paper feed cassette or multi-purpose tray as the paper source. It can also select an optional if one is installed. (See page 2-15.) (2) Select the alternative paper source when `Use alternative ?` is displayed.

Key	Function
CONTINUE/ ◂ key	(1) This key forcibly cancels errors and resume printing when printing is halted due to errors such as memory overflow. (2) This key functions as the ◂ key during mode selection. It moves upward in the mode select menu and moves the cursor left.
EXIT/**MODE** key	(1) This key interrupts settings when pressed during mode selection. (See page 2-23) (2) This key is used to start and end the next mode selection and make settings. This key is used in relation to the interface, emulation, fonts, character code set, memory card operations and optional hardware, etc. (For details, see the menu hierarchy given at the end of this manual.)
+ key **–** key	These keys are used to select menus and change setting values while making settings with the **MODE** key. Holding either key down activates an auto-repeat function causing menus to continuously change.
FORM FEED and ▸ key	(1) This key is used to forcibly print a form feed on the last page when a print timeout occurs. (2) This key functions as the ▸ key during mode selection. It moves downward in the menu hierarchy and moves the cursor right (See page 2-23).
ENTER/ **STATUS** key	(1) This key confirms settings selected during mode selection. (2) This key prints a status page (online). (See page 2-19.) (3) This key determines the paper source while `Use alternative?` is being displayed. (See page 5-10.)

Notes

- Menus set using these keys are enabled for the interface currently indicated on the message display.
- Settings made from the control panel may be automatically switched to different settings by application software being used.

Operating Procedures

This section explains basic operations of the printer and procedures leading up to and including printing.

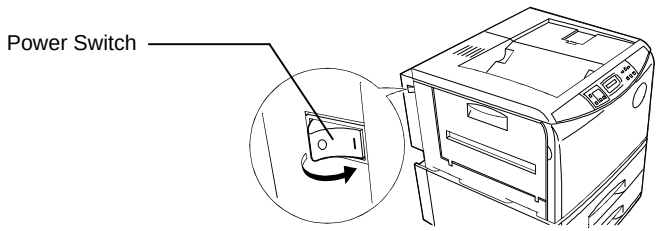
Operating Precautions

- Do not turn off power during printing. This may result in a paper jam or damage to the printer.
- Do not open covers on the printer or covers of optional equipment or open the paper feed cassette during printing.
- Do not move the printer during printing.
- Refrain from frequently plugging and unplugging the power plug from the power outlet even when power is turned off.
- Do not plug or unplug the power cord or printer cables while the printer's power is turned on.
- Be sure that the printer's power is off when inserting or removing a memory card. Inserting or removing a memory card while the printer's power is on may result in damage to the memory card and/or the printer.
- Be sure to carefully attach and detach paper feed cassettes and carefully open and close the top cover.
- Be sure to unplug the power cord from the power outlet and take precautions against dust gathering on the printer by draping a cover over it when it is not in use.

Switching Power On

Check that the power cord is securely plugged in at both ends. Check that the printer is connected to the computer (See page 1-28).

1. Push the power switch to the ON (|) position.



2. Wait for the printer to warm up. During warm-up the message display indicates `Self test`.

3. At the end of the warm-up period, the ON LINE indicator lights, and the message display indicates `Ready`.

The printer is now ready to print.

Note

If an error is detected while the printer is warming up, the ATTENTION indicator will light. A message concerning the error will be displayed in the message display. (See **Chapter 4**.)

Basic Printing Operations

The flow of basic operations to print is given below. Keys on the control panel are explained after that. For details on using the **MODE** key, be sure to read the section “Mode Select Menu” at the end of this manual in conjunction with this section.

1. Use the **MODE** key to set an emulation for the printer which conforms to the software being used.

   This printer is shipped from the factory with emulation set to HP LJ 5M/5Si.

2. Use the **MODE** key to select the font to use and paper direction.

3. Use the **FEED** key to select paper feeding from the cassette or the multi-purpose tray.

4. Use the **STACK** key to select the destination output tray.

5. Use the **MODE** key to set the number of printed copies.

6. Check that the message Ready appears in the message display and that the ON LINE indicator lights, then make preparations to print from the computer.

Press the **FORM FEED** key if, after printing, the message Waiting appears in the message display.

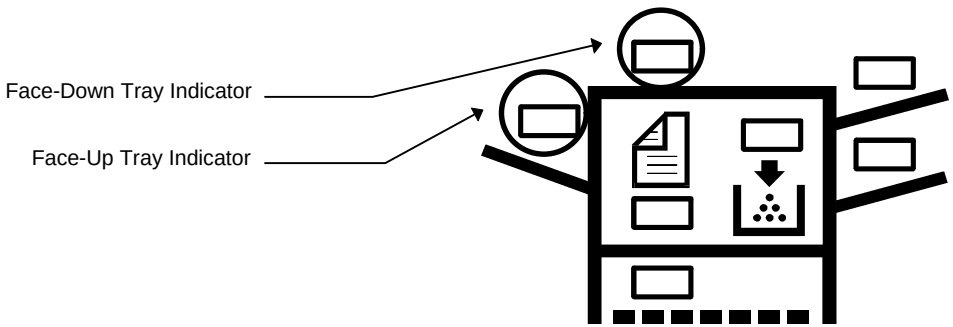
Selecting the Output Tray

Printed paper can be output on either the face-up output tray or the face-down output tray. Selecting the face-up output tray will cause paper to be stacked with the printed surface facing up. Selecting the face-down output tray will cause paper to be stacked with the printed surface facing down. Normally it is more convenient to use the face-down output tray.

When the message `Ready` or `Add paper` appears in the message display, the output tray will be switched every time the **STACK** key is pressed and the selected destination will appear in the message display as follows.

```
Face-up tray
Face-down tray
```

The output tray currently selected will also flash on the indicator on the front panel.



Feed Selection

Use the **FEED** key to select whether to feed paper from one of the paper feed cassettes or from the multi-purpose tray. If optional paper feeders (PF-30 or EF-1/UF-1) are installed, any of these can also be selected.

The **FEED** key can be used whenever the message display indicates `Ready` or `Add paper`.

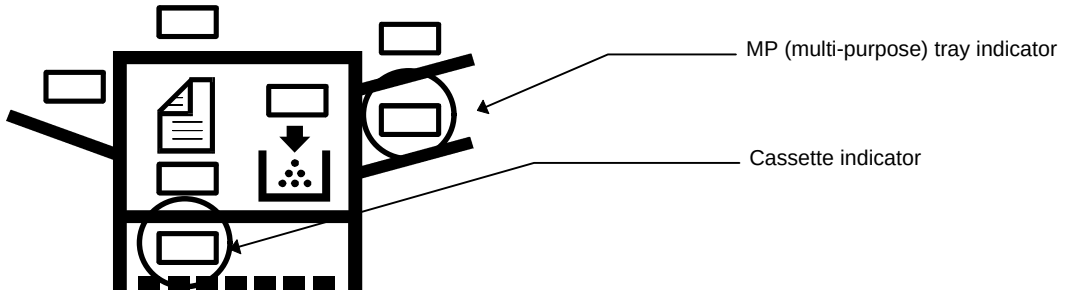
Press the **FEED** key. The selection cycles and is momentarily displayed in the message display as:

`Cassette 1`	(Paper feeder's top cassette)
`Cassette 2`	(Paper feeder's bottom cassette)
`Cassette 3`	(Displayed when an optional feeder is installed [upper cassette])
`Cassette 4`	(Displayed when an optional feeder is installed [lower cassette])
`Cassette 5`	(Displayed when a second optional feeder is installed [upper cassette])
`Cassette 6`	(Displayed when a second optional feeder is installed [lower cassette])
`EF/UF`	(Displayed when an EF-1 or UF-1 is installed)
`MP tray`	(Printer's multi-purpose tray)

The paper size and media type set for the paper source are also displayed in addition to the above displays.

The cassette indicator corresponding to the selected cassette on the control panel will flash. Selecting the paper feeder (PF-30) cassette will also light the ready indicator on the front of that cassette.

Paper feed selections can also be made using the PRESCRIBE 2e PSRC command.



Switching Online/Offline

After printing starts, it is possible to interrupt printing to check whether the print job is coming out as anticipated.

Pressing the **ON LINE** key during data processing will cause the ON LINE indicator to go out and pressing it during printing will cause the printer to stop after the page currently being printed is finished. During processing means anytime the messages `Processing,Waiting` or `FormFeed TimeOut` are being displayed in the message display.

The printer continues to receive data even while the printer is offline while the message `Processing` is displayed.

Press the **ON LINE** key to bring the printer online again. The printer will come online and the ON LINE indicator will light.

Read the section below on how to cancel printing.

Canceling Printing

Perform the following procedure when you wish to cancel printing after it has begun.

1. Check if the message `Processing` is displayed in the message display.

2. Press the **ON LINE** key to take the printer offline.

3. Perform the necessary procedure on the computer to halt printing.

4. Press the **CANCEL** key.

5. The message `Print Cancel?` will appear in the message display and the interface to be canceled will be displayed.

   The following interfaces may be displayed.

   `Parallel`
   `Serial`
   `Option 1` (only when an optional interface is installed)
   `Option 2` (only when an optional interface is installed)

6. Selecting the interface to cancel using the **+** or **–** key and then press the **ENTER** key. Printing from the interface selected will be stopped.

   A few pages may be printed even after the **CANCEL** key is pressed as remaining data received before the **CANCEL** key was pressed is printed.

   The message `Print Cancel? Current job` will also be displayed when the **CANCEL** key is pressed for the purpose of stopping the printing of status pages or font lists from the control panel. When the **ENTER** key is pressed, the message `Cancelling data` appears in the message display and printing stops after the printer finishes printing the current page.

Press the **CANCEL** key again if you wish to stop the cancellation of printing.

Press the **ON LINE** key to put the printer back online to continue with other print jobs.

Notes

- Canceling data from the computer using the **CANCEL** key will restore temporary settings to their default values. (The same status resulting from executing the PRESCRIBE 2e RES command.)
- It is impossible to cancel printing of just one side when printing in duplex mode using an optional duplex printing unit (DU-30/DU-31).

Status Printout

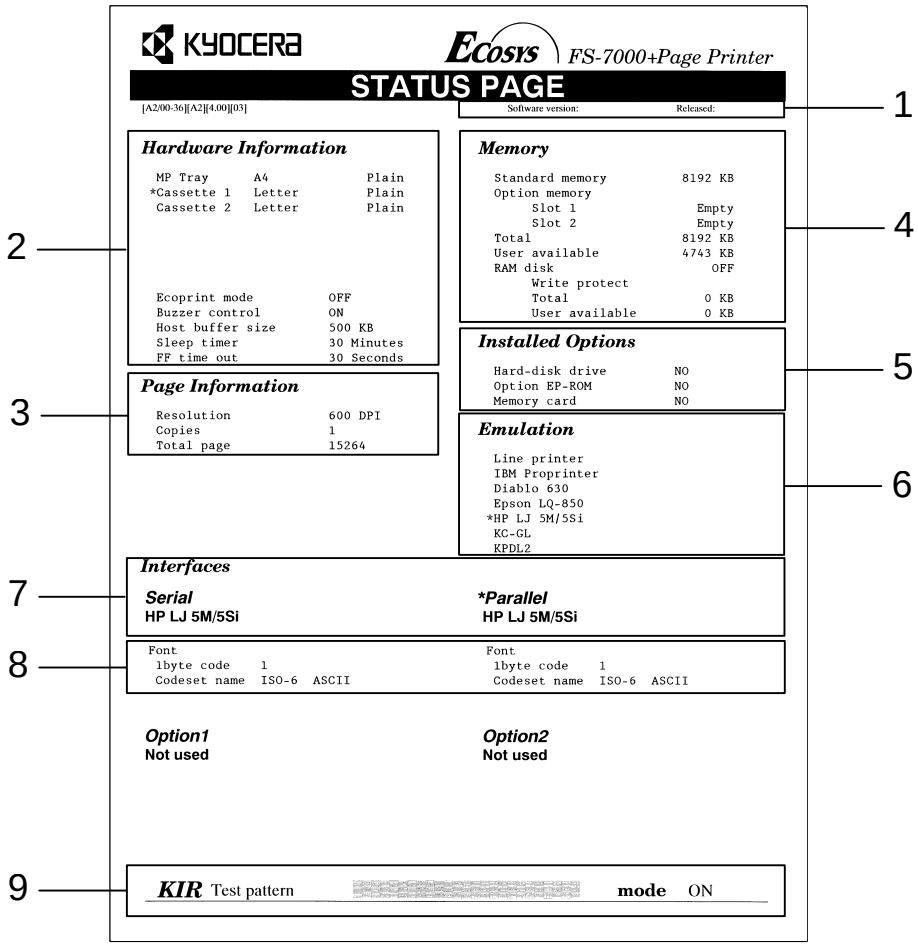
It is possible to print out and check the printer's current status including unit emulation, font, printing range, and memory usage.

1. Check that the ON LINE indicator lit and that the message Ready is displayed in the message display.

2. Press the **STATUS** key. The message display will read Processing, and a status page will be printed. After it is finished printing, the message display will return to Ready.

An example of a printed status page is shown on the next page. Note that information on an actual status page may differ slightly from this example.

Sample Status Page



1 — Software version

This information shows the software version and date of issue of the printer.

2 — Hardware information

This information shows the currently selected paper feed source (indicated by an asterisk), paper size, paper type, and main settings of the printer.

3 — Page information

This information shows the currently selected resolution and number of copies.

4 — Memory usage

This information shows the amount of total memory installed in the printer and the amount of currently available memory.

5 — Installation Options

This shows the options currently installed in the printer.

6 — Emulation

This shows all available emulations and the currently selected emulation (marked with an asterisk). The printer is shipped from the factory set to HP LJ 5M/5Si emulation.

7 — Interface information

This information shows all interfaces installed in the printer and the currently selected interface.

8 — Fonts at startup (for each interface)

This shows the font automatically selected when the printer starts up (default font). It is possible to set different fonts for the parallel interface and the serial interface. The figure on page 2-20 shows default settings. The font is set to "1" (Courier bitmap font).

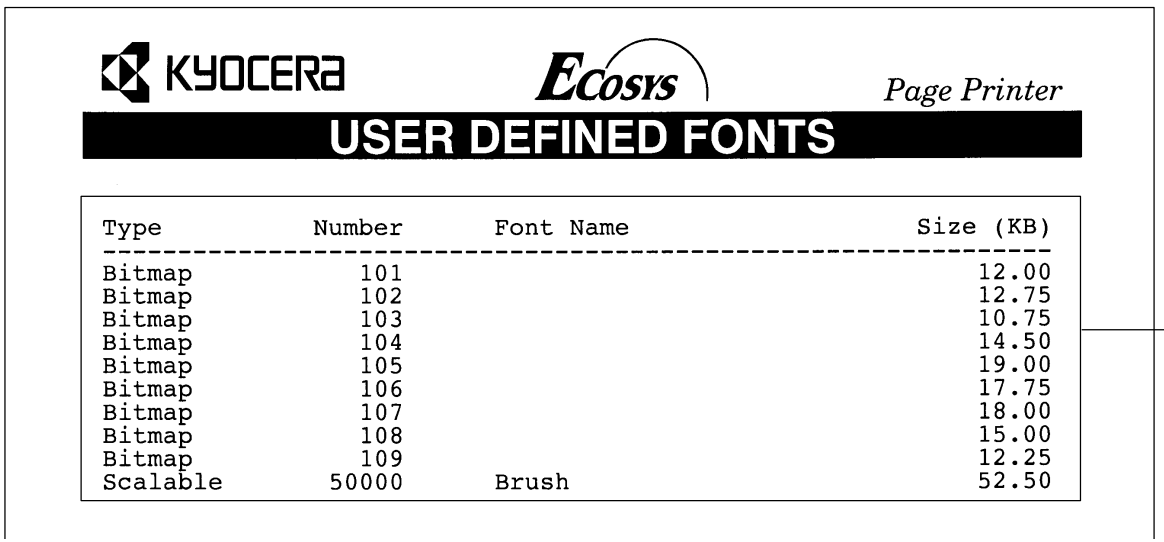
This also shows font information similar to the column below if an optional interface is installed.

9 — KIR test pattern

This is used when setting the printer's KIR mode. For details, see page 2-58.

10 — User font list

Following the status page, font listings are output which show the fonts which have been downloaded to the printer from the computer.


KYOCERA ECOSYS Page Printer

USER DEFINED FONTS

Type	Number	Font Name	Size (KB)
Bitmap	101		12.00
Bitmap	102		12.75
Bitmap	103		10.75
Bitmap	104		14.50
Bitmap	105		19.00
Bitmap	106		17.75
Bitmap	107		18.00
Bitmap	108		15.00
Bitmap	109		12.25
Scalable	50000	Brush	52.50

10

Form Feed

Depending on the software, the message Waiting may be displayed in the message display when you get to the end of a print job. This occurs when the software does not issue a final form feed to the printer indicating the end of the print data. If you wait awhile, FormFeed TimeOut will be displayed and the last page will be printed automatically. Pressing the **FORM FEED** key allows you to finish printing immediately.

1. Check if the message display reads Waiting.

2. Press the **FORM FEED** key. The message display will now read Processing and the last page will print.

Note

The Waiting display may also appear due to interruptions in printed data while the computer is processing data. Pressing the **FORM FEED** key unnecessarily when the message display reads Waiting will result in a form feed.

Mode Selection

The **MODE** key is used when making various mode settings and selections. For details, see the section **Mode Selection Menu** beginning on the next page.

Mode Selection Menu

This section explains the menu hierarchy used for all menus which can be set and selected using the **MODE** key. The **MODE** key can be used to display all of the menus in the table below. This mode selection menu conforms to the menu hierarchy given at the end of this manual.

Pressing the **MODE** key initially displays menus at the top of the hierarchy.

Use the **+** and **–** keys to move between menus in the same level. The **+** key shows the next menu, while the **–** key shows the previous one. Change levels by using the ◂ and ▸ keys. The ▸ key moves to lower levels (sub-menus), while the ◂ key moves to higher levels.

Mode Selection Menu List

Menu	Description	Default Setting
Interface >	Selects the interface for which settings are to be made. Settings from the mode select menu are applied to the interface selected here.	Parallel
	• Depending on the computer connected, you can select from any of Nibble (high), Auto, Normal, High Speed.	Nibble (high)
	• The following settings can be made for the serial interface.	
	Baud rate	9600
	Data bit	8
	Stop bit	1
	Parity	None
	Protocol	DTR (pos.) & XON
	Barcode mode	Off

(Continued on next page)

Menu	Description	Default Setting
Number of copies	Set the number of copies to be printed. This can be set up to 999.	001
Emulation >	Switches the printer emulation. The mode can be further set if KC-GL emulation is set.	HP LJ 5M/5Si
Font >	Selects the print font.	Bitmap
Page set	Size reduction settings [See page 29]	[CS] → [CS]
Page orientation	Print direction settings [See page 29]	Portrait
Opt. ROM >*	Reads information from the option ROM installed in the printer's main board.	
HARD DISK >*	The following settings can be made from sub-menus when an optional hard disk unit is installed. (For details, please read the hard disk unit instruction manual.)	—
RAM DISK mode >*	The following settings can be made from sub-menus when the total printer memory is 12 MB or more (no optional hard disk installed) and this mode is set to On.	Off
MEMORY CARD >*	The following operations can be performed from sub-menus on memory card installed in the printer.	—
Paper handling >	The following operations can be performed from sub-menus on paper type.	
	Multi-purpose tray mode	First
	Paper size for multi-purpose tray	A4 or Letter
	Paper type for multi-purpose tray	Rough
	Paper size for optional envelope feeder (EF-1) or universal feeder (UF-1)*	DL or Business
	Paper type for optional envelope feeder (EF-1) or universal feeder (UF-1)*	Envelope
	Paper type for Cassette 1– 6	Plain
	Duplex printing mode*	None
	Optional stacker mode*	Sorter
	Override A4/Letter	Off
	Set up the custom paper type	—
	Reset the custom paper type	—

(Continued on next page)

Menu	Description	Default Setting
Others >	The following sub-menus can be displayed by pressing the ▸ key and then the + or – key.	
	Message language setting	English
	Automatic form feed timeout setting	30 sec.
	Sleep timer setting [See page 2-56.]	30 min.
	Receive data damping [See page 2-57.]	—
	Print a list of resident fonts	—
	Printer reset	—
	Line feed setting [See page 2-29.]	LF only
	Carriage return setting	CR only
	Display total number of printed pages	—
	KIR mode setting	On
	Ecoprint Mode setting	Off
	Page protection mode	Auto
	Resolution setting	600
	Resource setting	Off
	Print density setting	03
	Alarm (buzzer) setting	On
	Service (for service personnel)	—

*: These items are available only when the printer is installed with the applicable option unit/kit.

Main items within these menus are explained beginning on the next page. For details on other menus, see the **Mode Select Menu** diagram at the end of this manual.

Configuring Interfaces

The printer is equipped with both a parallel and serial interface. Independent settings can be made for each interface. Optional interfaces can also be installed.

To configure each interface, press the **MODE** key and use the **+** or **–** key to select the interface you wish to make settings for.

Note

This interface selection does not select which interface data will be received from. The printer automatically selects that interface.

Parallel Interface

The parallel interface mode of this printer supports a bi-directional/high-speed mode. Normally, this interface is used under the default setting `Nibble (high)`, see **Appendix C**. After setting the interface, be sure to reset the printer or turn the power off at least once. The new setting will be enabled thereafter.

Emulation Selection

The following emulations can be selected for this printer. The emulation selected is stored even while the printer's power is off.

Line printer
IBM Proprinter
Diablo 630
EPSON LQ-850
HP LJ 5M/5Si (Default setting)
KPDL
KC-GL

KC-GL Emulation

The following settings can be made from the sub-menu when KC-GL emulation is selected.

Display	Description
> KC-GL Pen width	The width of pens (1) through (8) can be set in 1-dot increments from 01 to 99. After selecting the pen on this sub-menu, you can also display and select the width set for that pen on a lower menu.
> KC GL Page set	Any of the following page sizes can be set: A2, A1, A0, B3, B2, B1, B0, SPSZ (custom size specified using the SPSZ command). The selected page size will be automatically reduced to the actual paper size being used.

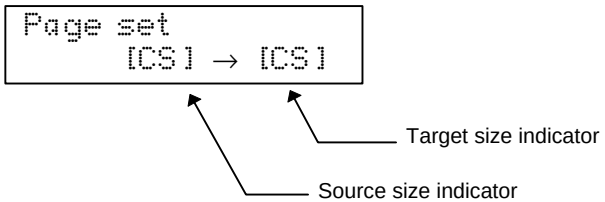
Reduction (Page Set)

Make settings on the page set menu to print at a reduced size. This menu is used to set the source paper size and the paper size to use after reduction. These settings can be made from within programs or files using the PRESCRIBE 2e SPSZ command.

Notes

- Printed results when making reductions differ from equivalent size printing. Sometimes the line width of characters may not be consistent or lines may appear in figures or image patterns.
- Landscape feeding while making reductions is possible from the multi-purpose tray in first mode.

Bring up the page set menu. The following display will appear.



Source size indicator···This is the paper size before reduction.
This must be the same as the paper size set for print data from the computer.

Target size indicator···This is the paper size after reduction.
This must be the same as the paper size set for the feed cassette.

It is possible to set the following paper sizes (envelope) when using the PRESCRIBE 2e SPSZ command. The message display will show the messages given in the following table.

Source Size-Target Size Combinations

Source Size Indicator	Target Size Indicator	Reduction/Enlargement Ratio
CS	CS CS 98%	100% 98%
LG Legal size (8.5 × 14 inches)	LG LG 98%	100% 98%
LT Letter size (8.5 × 11 inches)	LT A4 LT 98%	100% 94% 98%
LD Ledger size (12 × 15.5 inches)	LD LD 98%	100% 98%
A5 (14.8 × 21 cm)	A5 A5 98%	100% 98%
B5 (18.2 x 25.7 cm)	B5 A5 B5 98%	100% 81% 98%

(Continued on next page)

Source Size Indicator	Target Size Indicator	Reduction/Enlargement Ratio
A4 (21 × 29.7 cm)	A4	100%
	LT	94%
	B5	86%
	A5	70%
	A4 98%	98%
B4 (25.7 × 36.4 cm)	B4	100%
	B5	70%
	A4	81%
	B4 98%	98%
A3 (29.7 × 42 cm)	A3	100%
	A4	70%
	B4	86%
	A3 98%	98%

RAM DISK

The RAM DISK function can be used when the total printer memory is 12 MB or more. A RAM DISK can be set up as a virtual media device by setting a given amount of the total printer memory as the RAM DISK. This can then be used for reading and writing data just as with a memory card or as a virtual mail box function (see page 2-34). Note however that data written to the RAM DISK is lost if the printer is reset or its power turned off. RAM DISK settings can be made from the printer's control panel.

Notes

- The RAM DISK is set from the printer's user memory. The printer's printing speed may therefore drop or insufficient memory errors result depending on the value of the RAM DISK setting.
- RAM DISK functions cannot be used if an optional hard disk unit is installed.

Setting the RAM DISK Size

1. Press the **MODE** key.

2. Press the **+** or **–** key and select `RAM DISK mode >`. (This menu appears when total printer memory is 12 MB or more.)

3. The default setting is `Off`. Pressing the **ENTER** key will cause a `?` to flash. Press the **+** or **–** keys to display `On` and then press the **ENTER** key.

4. Press the ▸ key to display `>RAM DISK size`.

5. Press the **ENTER** key again, and change the RAM DISK size using the **+** or **–** key. It is not possible to make a setting that exceeds total printer memory. The default value for the RAM DISK is the total printer memory minus 9 MB. This parameter may be set anywhere from 01 to 99 depending on the available printer memory. Press the **EXIT** key if you want to cancel the setting.

6. Once the desired RAM DISK size is displayed, press the **ENTER** key.

7. Press the **EXIT** key. Then turn the printer's power off and on again. The setting will be activated after restart.

RAM DISK Operations

The following operations are available with the RAM DISK.

- Read Data
- Write Data
- Delete Data
- Print a List of Data Names
- Print Accumulated VMB Data
- Print VMB List

Except for printing accumulated VMB data and printing a VMB list, procedures for all operations are the same as for a memory card. Please see the memory card item for the given procedure.

Virtual Mail Box (VMB)

The Virtual Mail Box (VMB) function is a mail box function for the printer which does not require a physical mail box to be attached to the printer. The virtual mail box function can be used when RAM DISK mode is On or when an optional hard disk unit is installed on the printer. This manual describes how to use the virtual mail box with a RAM DISK.

With a virtual mail box, unlike a physical mailbox, data sent from the computer is stored in the RAM DISK as rasterized data. This stored data accumulates in a numbered virtual output tray. When it is time to actually print the data, it is printed by specifying the virtual output tray number where the data is stored using the printer's control panel or an optional barcode reader (BC-1).

Note

If all the data in a virtual output tray is printed, all data in that tray will be deleted. If printing is halted by pressing the **CANCEL** key during printing, data in that tray will not be deleted. Data is not deleted unless all data in the virtual output tray is printed.

- **Locked mailbox**
  Allowing a password to be set for the virtual output tray, this feature makes the printout of confidential documents easy.

- **Multilevel mailbox**
  Supporting up to 255 virtual output trays, mail boxes can be allocated at the individual level rather than by the user's job title or group.

- **Large capacity mailbox**
  There is no limit on the size per virtual output tray. Since the only limit is on the total size of all trays, all of the RAM DISK can be used.

Outputting to a VMB

When sending data to a virtual output tray set within the RAM DISK, make this setting from the printer driver. With this setting, data can be sent by specifying the desired virtual output tray number. It is also possible to assign a name to a virtual output tray and send data by specifying that name. (For details on this setting, please refer to the help documentation for the printer driver.)

When data is sent by specifying a virtual output tray, printing to paper is not performed at the time data is sent. Sent data accumulates in the virtual output trays of the RAM DISK. For details on printing accumulated data, please see the next item.

Print Accumulated VMB Data

This function prints VMB data accumulated in a virtual output tray.

1. Select `RAM DISK mode` on the printer's Mode Select Menu and display `>Print VMB data Tray`. The VMB tray number will appear in the location marked by `#`'s below, while the VMB tray name will appear in the location marked by `X`'s.

```
>Print VMB data
Tray###:XXXXXXX
```

2. Pressing the **ENTER** key will cause a `?` to flash.

```
>Print VMB data
Tray###?XXXXXXX
```

3. Each time the **+** or **–** keys are pressed, the VMB data display will change. Press the **CANCEL** key if you want to halt printing. The `?` display will disappear.

4. Display the VMB data you want to print. Pressing the **ENTER** key will cause Processing to be displayed and the data will be printed.

Print Accumulated VMB Data with a Password

This function prints VMB data protected by a password which has accumulated in a virtual output tray.

1. Display >Print VMB data Tray. The VMB tray number will appear in the location marked by #'s below, while the VMB tray name will appear in the location marked by X's.

```
>Print VMB data
Tray###:XXXXXXX
```

2. Pressing the **ENTER** key will cause a ? to flash.

```
>Print VMB data
Tray###?XXXXXXX
```

3. Each time the **+** or **–** keys are pressed, the VMB data display will change.
   Press the **CANCEL** key if you want to halt printing. The ? display will disappear.

4. If a password is set for the VMB data you want to print, the message display will change to >User ID? 00001 and the printer will standby to accept a password. The cursor will blink in the one's place of the displayed number. Enter the correct password. Use the ◂ and ▸ keys to change places and the **+** or **–** keys to change the displayed number. Passwords from 00001 to 65535 can be entered.

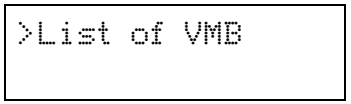
5. Press the **ENTER** key once the correct password is entered. Processing will be displayed and the data will be printed. If the password was incorrect, an error message will be displayed. (See page 5-11.) Pressing the **CONTINUE** key will return the printer to Ready status.

Note that the password entered here is reset (returns to 00001) when this mode is exited.

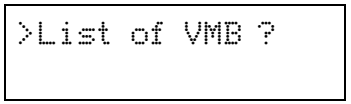
Print VMB Accumulated Data List

This feature prints a list of VMB data accumulated in the RAM DISK.

1. Display >List of VMB.

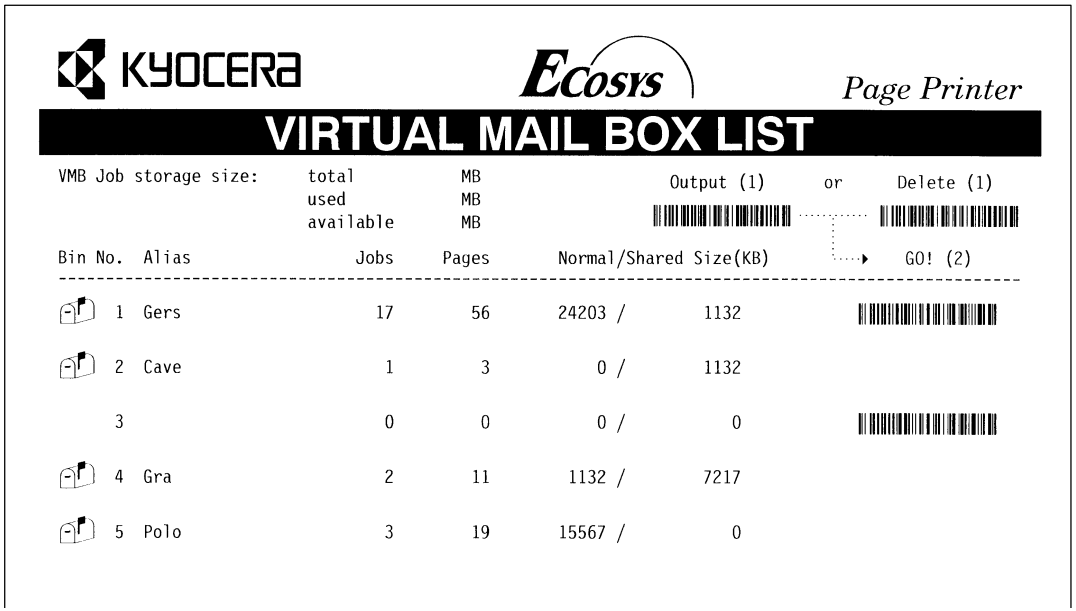


2. Pressing the **ENTER** key will cause a ? to flash.



Press the **CANCEL** key if you want to halt printing. The ? display will disappear.

3. Pressing the **ENTER** key will cause Processing to be displayed and the VMB data list to be printed.



KYOCERA ECOSYS Page Printer

VIRTUAL MAIL BOX LIST

VMB Job storage size: total MB
used MB
available MB

Output (1) or Delete (1)

GO! (2)

Bin No.	Alias	Jobs	Pages	Normal/Shared Size(KB)
1	Gers	17	56	24203 / 1132
2	Cave	1	3	0 / 1132
3		0	0	0 / 0
4	Gra	2	11	1132 / 7217
5	Polo	3	19	15567 / 0

An actual VMB list printout will differ slightly from sample given above.

Information regarding virtual output trays which are set will be displayed in the virtual mail box list. A mark is shown with the bin number for virtual output trays which contain data. If a password is set for a virtual output tray, there is no barcode shown for that virtual output tray. Also, "FULL!!" will be shown for virtual output trays for which there was an error when data was sent to them. A VMB ERROR LOG will be printed when data from such a virtual output tray is printed.

Operations for Using a Barcode Reader

If an optional barcode reader (BC-1) is connected to the printer, it is possible to print data within a virtual output tray using the barcode in the list. Select the barcode for "Output (1)" in the upper right using the barcode reader and then select the barcode for the virtual output tray you want to print. If you want to delete the data in a tray, select "Delete (2)" also in the upper right and then select the barcode for the virtual output tray you want to delete. Note that all data in the tray will be deleted.

For detailed operating procedures for the barcode reader, please read the instructions included with the barcode reader.

Memory Card

This printer is equipped with a memory card slot. This allows, for example, the use of fonts other than internal fonts by using an optional font card. If a JEIDA Ver. 4.2/PCMCIA Ver. 2.1 memory card is used, it is possible to read, write and delete data and format the memory card.

Note

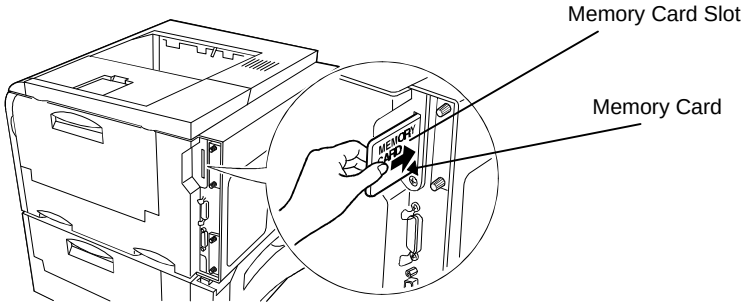
Only 32 MB or less flash or S-RAM type memory card conforming to JEIDA Ver. 4.2/PCMCIA Ver. 2.1 can be written or formatted by this printer.

It is possible to set the partitions on the memory card which you wish to execute for the printer at power-on by using the PRESCRIBE 2e FRPO I0 command. For details on the FRPO command, please read the *Programming Manual* on the supplied CD-ROM.

A font card can be read from the control panel or read automatically upon power-on or printer reset when a font card is inserted in the printer.

Inserting Memory Card

Carefully insert the memory card as far as it will go with the top side facing right (back side of the printer).



Notes

Follow the precautions below when handling a memory card.

- A memory card is sensitive to static electricity. Before handling a memory card, be sure to eliminate any static electricity which may have built up on your body or clothing by touching a metallic object.
- Use a flash memory card or S-RAM memory card conforming to JEIDA Ver. 4.2/PCMCIA Ver. 2.1 which are approved by Kyocera.
- Be sure that its power is off when inserting or removing a memory card.
- Do not insert a memory card into the slot with undue force.
- Do not bend a memory card.
- Do not drop a memory card or subject them to shock.
- Do not splash water or other liquids on a memory card.
- Do not place a memory card near fires or heat sources.
- Do not subject a memory card to direct sunlight.
- Store a memory card in their protective case when not using them.

Operating a Memory Card

The following operations on a memory card inserted into the printer's memory card slot are possible.

- Reading Fonts
- Reading Macros
- Reading Data
- Writing Data
- Deleting Data
- Formatting Memory Card
- Printing a List of Data Names (Partitions)

Note that only reading fonts and printing a list of partitions are possible when a font card is inserted. The following sections explain each of these operations.

Each operation is described below.

Reading Fonts from a Memory Card

Fonts can be read into the printer's internal memory from an optional font card. The font read can then be selected from the printer's control panel. A font card is automatically read into the printer when the printer's power is turned on. The operation described here is performed while the message display reads `Ready`.

1. Check that the font card is inserted into the memory card slot. Bring up the menu `>Read fonts` on the message display. This display only appears if a font card is inserted.

2. Press the **ENTER** key. `?` will appear.

   Press the **CANCEL** key to stop reading fonts.

3. Pressing the **ENTER** key again will cause `Processing` to appear in the lower part of the message display and font data to be read from the font card.

4. After fonts have been read, the message display will return to `>Read fonts`.

5. Pressing the **EXIT** key will cause the message display to return to `Ready`.

Reading Macros from a Memory Card

Macro data on a memory card can be registered on the printer. Registered macro data can be used just like macro data located in printer memory. If a memory card already containing macro data is inserted in the printer, that macro data will be read into the printer automatically when the printer's power is turned on.

The operation described here is performed when a memory card is inserted while the message display reads Ready.

Note

Macro data on a memory card has no effect on printer memory.

1. Check that the memory card containing macro data is inserted. Bring up the menu >Read macro on the message display. This display only appears if a memory card containing macro data is inserted.

2. Press the **ENTER** key. ? will appear.

   Press the **CANCEL** key to stop reading macro data.

3. Pressing the **ENTER** key again will cause Processing to appear in the lower part of the message display and macro data to be read from the memory card.

4. After macro data has been read, the message display will return to >Read macro.

5. Pressing the **EXIT** key will cause the message display to return to Ready.

Notes

- If the name of a macro on the memory card is the same as that in printer memory, the macro data on the memory card with the conflicting name will not be registered.
- Registered macro data will be lost if the memory card is pulled out. Re-execute >Read macro if this happens.

Reading Data (Partitions) from a Memory Card

Specified data (partitions) on a memory card can be read into printer memory.

1. Bring up the menu >Read data on the message display.

This display only appears if there is data on the memory card.

2. Press the **ENTER** key. ? will flash.

3. You can scroll through data names on the memory card one by one by pressing the **+** key.

Press the **CANCEL** key to stop reading data.

4. Press the **ENTER** key while the desired data name is being displayed. Processing will appear in the message display and the selected data will be read into the printer.

After data has been read, the message display will return to Ready.

Writing Data (Partitions) to a Memory Card

Data sent from the computer can be written on a memory card. Data written on the card can be read into printer memory by key operations from the control panel of the printer.

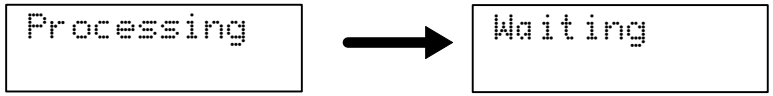
Assuming the card has enough memory capacity, up to 127 partitions can be written on a single card. Partitions written on the card are automatically assigned names, which can be checked by printing out a partition list.

Check that the memory card can be written (that write-protection is released).

1. Bring up the menu >Write data on the message display.

2. Press the **ENTER** key. ? will appear.

3. Pressing the **ENTER** key again will cause Processing to appear in the message display followed by Waiting.



Press the **CANCEL** key to cancel writing data.

4. With the printer now set, send data from the computer to the printer.

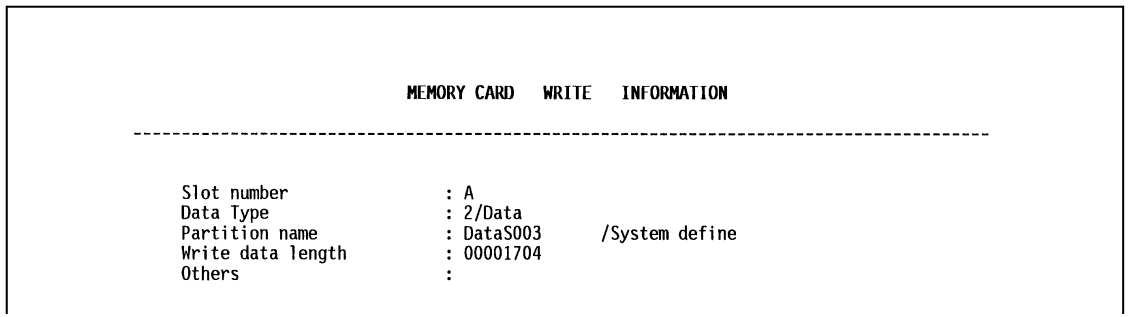
[Example] Sending the file TEST.TXT to the printer from the computer (DOS mode).

```
COPY TEST.TXT PRN
```

The message display will change to Processing when data is received and will change back to Waiting when reception is finished.

5. Check that the message display has changed to Waiting and press the **FORM FEED** key.

The printer will automatically print the data just written (example below). This printout can be used to check the name (partition name) under which data was written and confirm that it was written properly.



```
                          MEMORY CARD   WRITE   INFORMATION

-------------------------------------------------------------------------------

     Slot number              : A
     Data Type                : 2/Data
     Partition name           : DataS003      /System define
     Write data length        : 00001704
     Others                   :
```

Slot number: Slot name for the memory card (only A is supported)
Data type: Data type (only 2 is supported)
Partition name: Name of the partition (data) written
Write data length: Size of the partition data written (in units of bytes)

After printing is finished, the message display will return to Ready.

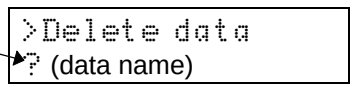
Deleting Data from a Memory Card

It is possible to delete data names on a memory card one at a time. Check that the memory card can be written (that write-protection is released).

1. Bring up the menu >Delete data on the message display. This display only appears if the memory card contains data.

2. Press the **ENTER** key. ? will flash and a data name will appear after it.

The ? will flash, and a data name will appear.



3. You can scroll through data names on the memory card one by one by pressing the **+** key. Press the **CANCEL** key to cancel this operation.

4. Press **ENTER** key while the data name you wish to delete is shown. The message display will change to Processing, and the printer will automatically print a partition list. Use this to check that the specified partition has been deleted properly.

After the partition list is printed, the message display will return to Ready.

Formatting Memory Card

It is necessary to first format a new memory card before it can be used by the printer. A formatted memory card can then be written with data.

Note

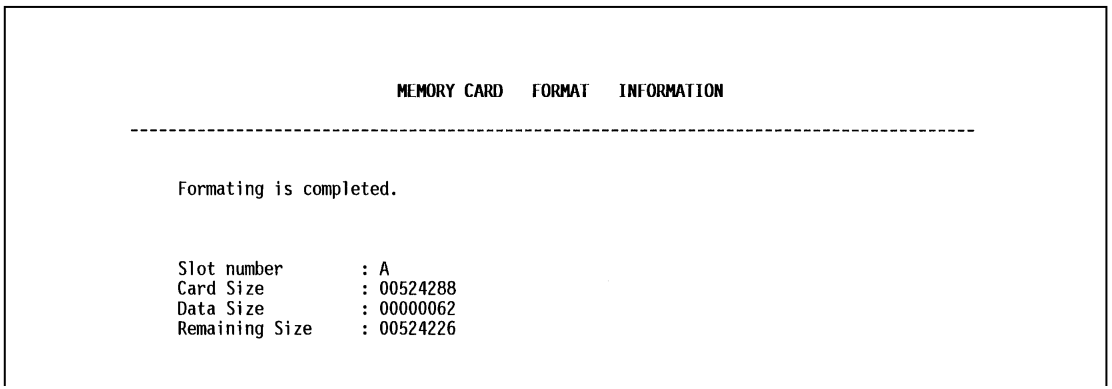
- Note that if you format a memory card which already has data written on it, that data will be lost entirely.
- Check that the memory card can be written (that write-protection is released).

1. Bring up the menu >Format on the message display.

2. Press the **ENTER** key. ? will appear.

3. Pressing the **ENTER** key again will cause Processing to appear in the message display and the memory card will be formatted.

The printer will print memory card formatting information (example below) after initialization is finished. Use this to check that the memory card has been formatted properly.



```
                    MEMORY CARD   FORMAT   INFORMATION

--------------------------------------------------------------------------------

    Formating is completed.


    Slot number        : A
    Card Size          : 00524288
    Data Size          : 00000062
    Remaining Size     : 00524226
```

Slot number: Slot name for the memory card (only A is supported)
Card size: The overall memory capacity of the card (in units of bytes)
Data size: The amount of data available to the system
Remaining Size: The remaining amount of available memory on the memory card

After this information is printed, the message display will return to Ready.

Printing a List of Data Names (Partitions)

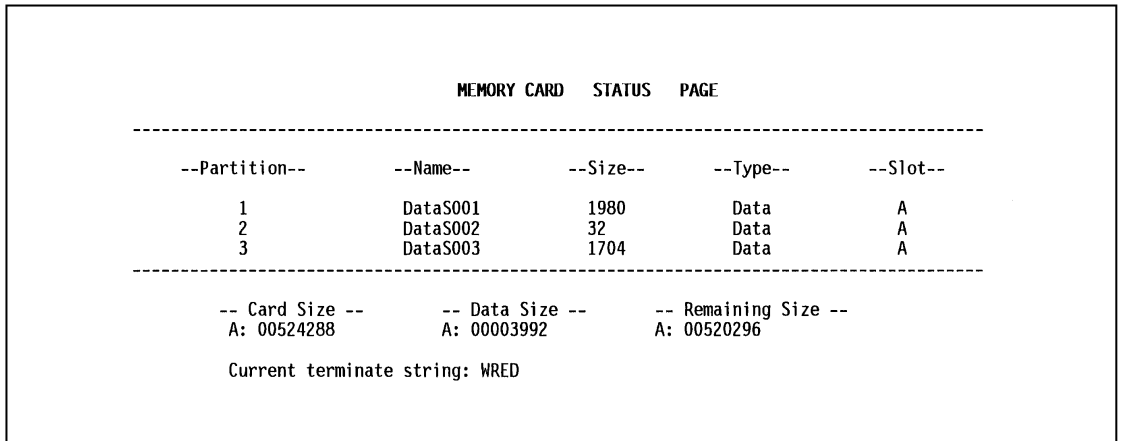
This operation prints the contents (data names, data size, etc.) of the memory card inserted in the memory card slot.

1. Bring up the menu >List of Partitions on the message display.

2. Press the **ENTER** key. ? will appear.

Press the **CANCEL** key to cancel printing.

3. Pressing the **ENTER** key again will cause printing to start.



MEMORY CARD STATUS PAGE

--Partition--	--Name--	--Size--	--Type--	--Slot--
1	DataS001	1980	Data	A
2	DataS002	32	Data	A
3	DataS003	1704	Data	A

-- Card Size --	-- Data Size --	-- Remaining Size --
A: 00524288	A: 00003992	A: 00520296

Current terminate string: WRED

After this information is printed, the message display will return to Ready.

Note

"Remaining Size" in the partition list indicates the amount of remaining memory on the memory card. Since the system uses about 70 bytes to write a piece of data on the memory card, the actual available memory on the card is a little less than that displayed.

Setting the Paper Type

This printer is capable of printing under the optimum setting for the type of paper being used.

Setting the paper type for the paper source from the printer's control panel will cause the printer to automatically print in the mode best suited to that type of paper. This allows you to easily achieve high-quality printing results. A different paper type setting can be made for each paper source including the multipurpose tray. Not only can preset paper types be selected, but it is also possible for the user to define and select customized paper types.

The following types of paper can be set. For details on paper, please see **Appendix B**.

Cassette, Media Type and Custom Settings

Media Type / Paper Type	MP tray	Cassette	EF/UF**	Duplex path (MP tray available only in Cassette mode)
Plain	○	○	○	○
Transparency	○	×	×	×
Preprinted	○	○	○	○
Labels	○	×	○	×
Bond	○	○	○	○
Recycled	○	○	○	○
Vellum	○	×	×	×
Rough	○	○	○	○
Letterhead	○	○	○	○
Color	○	○	○	○
Prepunched	○	○	○	○
Envelope	○	×	○	×
Cardstock	○	×	○	×
Custom #*	○	○	○	○

*: This is a paper type defined and registered by the user. Up to eight types of user settings may be defined. A number from 1 to 8 is used in place of the #. For details on setting user types, please see page 2-52.

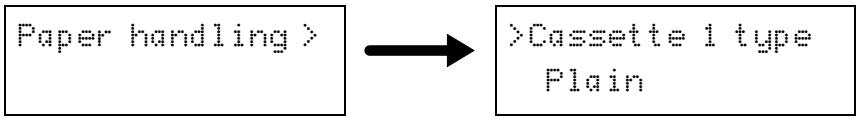
**: Do not set a paper type Envelope and Cardstock for the paper set in the UF-1.

○: Can be stored
×: Cannot be stored

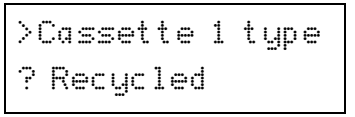
Making Settings

The following describes the procedure for setting the paper type using the Recycled type and Cassette 1 as examples.

1. Display `Paper handling >` on the printer's Mode Select Menu and press the ▸ key. Then use the **+** and – keys to display the `Cassette 1 type`.



2. Pressing the **ENTER** key will cause a `?` to flash. Press the **+** or – keys to display `Recycled`.



Press the **CANCEL** key if you want to cancel the setting. The `?` display will disappear.

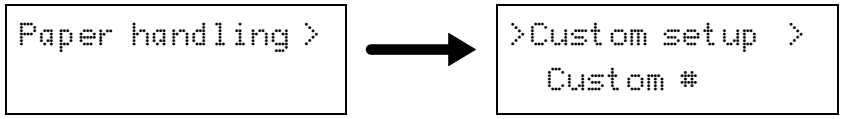
3. Pressing the **ENTER** key will cause the `?` to disappear. Pressing the **EXIT** key will exit the setting.

The same procedure can be used to set the paper type for other paper sources.

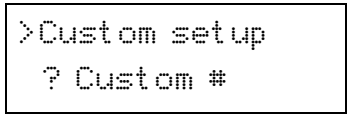
Paper type user setting

The following describes the procedure used to set a user-defined paper type for the printer. Eight custom user settings may be registered. After having been set, any of these may be called up when setting the paper type for a paper source.

1. Display `Paper handling >` on the printer's Mode Select Menu and press the ▸ key. Then use the **+** and – keys to display `>Custom setup`.



2. Pressing the **ENTER** key will cause a `?` to be displayed. Press the **+** or – keys to select the paper type (see page 2-51) that you want to customize and then press the **ENTER** key.



Note

Note that if you change the setting for a paper type other than `Custom 1` through `8` the paper type setting for each paper source set to that paper type will be changed.

3. Press the ▸ key after selecting the paper type you want to customize. Pressing the **+** or – keys will cycle through a display of the submenus given in the table below.

Submenus displayed	Selection parameters	Description
>>Paper weight	Light (Thin) Normal (default) Heavy (Thick)	Sets the paper thickness
>>Fuser mode	Vellum Low Middle (default) High	Sets the temperature for the fusing unit.
>>Duplex path (only when the paper type is Custom #)	Enable (default) Disable	Selects duplex printing on/off when a DU-30/DU-31 is installed (setting active only for the selected paper type)

Display the submenu to be set and press the **ENTER** key. A ? will flash. Press the **+** or – keys to select the desired parameter.

```
>>Paper weight
? Normal
```

(Example: Setup menu for Paper weight)

Press the **CANCEL** key if you want to cancel the setting. The ? will disappear.

4. Pressing the **ENTER** key will cause the ? to disappear. Pressing the **EXIT** key will exit the setting.

The same procedure can be used to set the parameters on other submenus.

Note that the setting status for paper weight and fuser mode used for each paper type is as given in the table below. In addition, all paper type settings made using Custom setup can be reset to the default values shown in the table below using the >Reset custom setup menu.

		Paper Type													
		Plain	Trans-parency*	Pre-printed	Labels	Bond	Recycled	Vellum*	Rough	Letter head	Color	Pre-punched	Envelope	Card stock	Custom
Fuser mode	Vellum							○							
	Low	○					○			○					
	Middle			○		○						○			○
	High		○		○				○		○		○	○	
Paper weight	Light (Thin)							○							
	Normal	○		○	○	○	○		○	○	○	○	○		○
	Heavy (Thick)		○											○	

*: These cannot be selected when the paper source is EF-1 or UF-1.

Sleep Timer Setting

This printer is equipped with a sleep timer function for conserving energy in cases where there has been no operation from the control panel or data has not been received for a predetermined period of time.

The sleep timer can be set anywhere from 0 to 120 minutes in 5-minute increments. Setting the sleep timer to 0 turns it off. The sleep timer is set at the factory to 30 minutes.

Once the set time arrives, the printer will display `Sleeping` and all indicators will go out. This minimizes the amount of energy used.

Pressing a key on the control panel, opening and closing a cover, or sending data to the printer while it is displaying `Sleeping` will cause the printer to display `Please wait` and it will begin warming up. After it warms up, the printer's ON LINE indicator will light and it will enter ready status.

Note

The printer environment last set is still maintained even though all indicators are out while the printer is in `Sleeping` mode.

Dumping Received Data

It is possible to print data received by the printer as hexadecimal code for the purposes of debugging programs and files.

1. Pressing the **ENTER** key once while >Print HEX-DUMP is shown on the message display will cause a ? to flash.

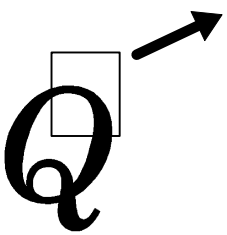
2. Send data to be dumped to the printer while the ? is flashing.

3. Pressing the **ENTER** key again will print the corresponding pages of dumped data. Once the dumped data you require has been output, it is possible to cancel the printing of any further dumped data by taking the printer offline by pressing the **ON LINE** key and then pressing the **CANCEL** key.

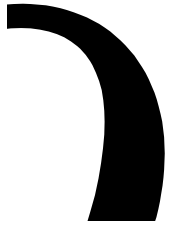
4. Once all data has been received, the message Waiting will appear. Press the **FORM FEED** key to finish printing.

KIR Level

This printer incorporates the KIR (Kyocera Image Refinement) smoothing function. KIR provides high quality printing by providing a software-type improvement to the resolution. Print a status page to find out the current mode.



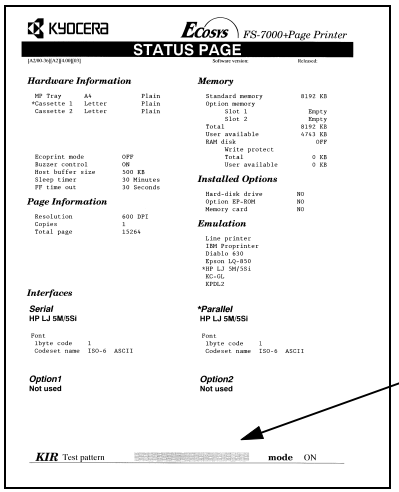
The KIR setting is Off.



The KIR setting is On (Default setting).

Note

- Set the print density to "03" when setting the KIR mode. For details on print density, see page 2-62.
- You can look at the check line, the last line on a status page, to make the optimum KIR mode setting. Please refer to the table on the next page.


KYOCERA Ecosys FS-7000+Page Printer

STATUS PAGE

[A2W0.30][A2][A0][B3] Software version Released

Hardware Information

MP Tray	A4	Plain
*Cassette 1	Letter	Plain
Cassette 2	Letter	Plain

Ecoprint mode	OFF
Buzzer control	ON
Host buffer size	500 KB
Sleep timer	30 Minutes
FF time out	30 Seconds

Page Information

Resolution	600 DPI
Copies	1
Total page	15264

Memory

Standard memory	8192 KB
Option memory	
Slot 1	Empty
Slot 2	Empty
Total	8192 KB
User available	6743 KB
RAM disk	OFF
Write protect	
Total	0 KB
User available	0 KB

Installed Options

Hard-disk drive	NO
Option EP-ROM	NO
Memory card	NO

Emulation

Line printer
IBM Proprinter
Diablo 630
Epson LQ-850
*HP LJ 5M/5Si
KC-GL
KPDL2

Interfaces

Serial
HP LJ 5M/5Si

Font
1byte code 1
Codeset name ISO-6 ASCII

Option1
Not used

***Parallel**
HP LJ 5M/5Si

Font
1byte code 1
Codeset name ISO-6 ASCII

Option2
Not used

KIR Test pattern **mode** ON

Status page

KIR Checking Lines

KIR Setting	Description
Optimized stripes	The current KIR setting is optimal.
Dark vertical stripes	The KIR mode currently set is too strong. Set the KIR mode to Off. (See the Mode Select Menu at the end of this manual.)
White vertical stripes	The KIR mode currently set is too weak. Set the KIR mode to On. (See the Mode Select Menu at the end of this manual.)

Ecoprint Mode

The Ecoprint enables you to reduce the amount of toner consumed on the page so as to save your printing costs. The factory-setting is off.

Ecoprint is Off (default)

Ecoprint is On

Notes

- Ecoprint status varies depending on the feed direction of the paper and the print direction.
- The Ecoprint setting has no effect on the print speed.

Resource Protection

When you switch from the HP LJ 5M/5Si emulation to another, all downloaded fonts and macros are lost. Resource protection preserves these PCL resources in memory so that they are intact when you change the emulation back to HP LJ 5M/5Si.

By using the printer's >Resource prot., you can select from two resource protection modes as follows:

```
>Resource prot.
  Permanent
```

In this mode, the printer stores fonts, macros, symbol sets, etc. in memory that were downloaded as permanent PCL resources. All temporary resources are lost when the emulation mode is changed from HP LJ 5M/5Si to another or vice versa.

```
>Resource prot.
  Perm / Temp
```

In this mode, the printer stores both permanent and temporary resources when the emulation mode is changed from HP LJ 5M/5Si to another or vice versa.

Note

The printer requires 10 MB or more of memory in order to set resource protection.

Adjusting the Print Density

If necessary, the print density can be adjusted from the Mode Select Menu. The required print density can be selected from five different steps (01 – 05). The factory setting is 03, and there is normally no need to alter this setting.

When using the KIR function, please use the "03" setting. For details on adjusting the KIR mode, see page 2-58.

Setting the Audio Warning (Buzzer)

In addition to the message displayed when the paper supply is exhausted, or when paper jamming occurs, an audio warning is made to sound. This is useful, for example, when the printer is in a location some distance from the user.

The audio alarm is set to On when leaving the factory. The buzzer will sound according to the type of printer error as given in the following table.

The buzzer does not sound if the buzzer setting is set to Off .

Type of Error and Corresponding Audio Alarm (Buzzer)

Priority	Error Message	Alarm Frequency	Remarks
High	Paper jam	short beeps	–
	Replace Toner Clean printer	short beeps	–
	Clean printer Press CONTINUE	short beeps	–
	Option stacker path error	short beeps	*
	Option Stacker paper full	short beeps	*
	Face-down tray paper full	short beeps	–
	Option tray ## paper full	short beeps	*
	Remove paper Option tray ##	short beeps	*
	Remove Opt. Stacker paper	short beeps	*
	Load (paper source)	short beeps	–
	Load Cassette #	short beeps	–
	Memory overflow Press CONTINUE	short beeps	–

(Continued on next page)

Priority	Error Message	Alarm Frequency	Remarks
	Print overrun Press CONTINUE	short beeps	–
	KPDL Error ## Press CONTINUE	short beeps	–
	MEMORYCARD err## Press CONTINUE	short beeps	*
	HARDDISK error## Press CONTINUE	short beeps	*
	RAM DISK error Press CONTINUE	short beeps	*
	Opt. ROM error Press CONTINUE	short beeps	*
	Add Staples Press CONTINUE	short beeps	*
	Set paper Press CONTINUE	short beeps	–
	Add paper	long beeps	–

Low

*: These error messages are displayed if the relevant option is fitted.
##: The number displayed will vary depending on the error. Please refer to **Chapter 5**.

The alarm will continue to sound while the error condition continues (if the printer is in the sleep mode, the alarm will be silent for that period alone). The alarm will cease to sound, however, when the **CANCEL** key is pressed.

To rectify the various error conditions listed above, please refer to **Chapter 5** of this manual, or to the operating manuals accompanying the various optional equipment.

Notes

- If you wish to cancel the data being processed while the audio alarm is sounding, press the **CANCEL** key twice. Firstly, the audio alarm will be turned off, and then the data processing will be canceled.
- After the audio alarm has been set to Off , even if the PRESCRIBE 2e FRPO INIT command is executed, the printer will not return to the initial (On) alarm setting. To set the audio alarm to On, reset using the mode select menu from the control panel.

Chapter 3 Fonts

This chapter describes the types of fonts you can use with the printer, including the printer's resident and KPDL fonts, and symbol sets.

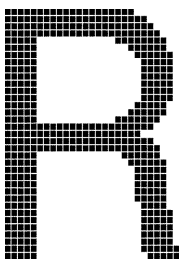
Bitmap and Scalable Fonts 3-2
List of Fonts 3-3
Symbol Set 3-8

Bitmap and Scalable Fonts

A font is a set of characters of a particular design. The design is referred to as a typeface. Several characteristics identify a font. These include the font type (bit map or scalable), symbol set, spacing, pitch, height, style, stroke weight, and typeface family.

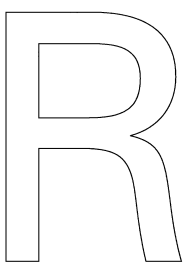
The printer provides two types of resident fonts: bitmap fonts and scalable (outline) fonts. Also, fonts may be downloaded to the printer's memory or optional harddisk from a memory card or disk. These fonts are referred to as downloadable or soft fonts. The printer accepts as many downloadable fonts as its user available memory permits.

Bitmap fonts



A bitmap font is made of a fixed bit pattern. This pattern is stored in a special format for use in the printer. Bitmap fonts have a fixed height (size) for each character. Therefore, different font sets are required for different font sizes. For example, Dutch801BM10-Roman is a 10-point font and Dutch801BM8-Roman is an 8-point font.

Scalable fonts



Scalable fonts provide the outline of the characters. This outline is scaled according to the scaling information from the computer and filled in for printing. Depending on the capabilities of the software you use, the scalable fonts can be scaled from 0.25 point to 999.75 points in quarter point increments.

List of Fonts

This section contains a full list of the printer's resident fonts. You can print the same font list from the printer by using the printer's control panel key. To print a list of fonts, refer to **Mode Select Menu**, *List of Resident fonts*.

Bitmap Fonts

The printer has 80 resident bitmap fonts. Note that all resident bitmap fonts include the letters BM in the typeface name.

Scalable Fonts

The printer has 45 resident scalable fonts. These fonts include the letters SWC or SWM in the typeface name and are equivalent to HP LaserJet fonts.

KPDL Fonts

The printer has 35 KPDL (Kyocera Page Description Language: Kyocera's version of PostScript) fonts. The KPDL fonts are Adobe PostScript Type 1-compatible and have the suffix SWA at the end of the font name.

Resident Scalable Fonts (1)

This is a sample of Audrey Two-RegularSWC font.
This is a sample of Clarendon-CondensedSWC font.
This is a sample of Courier-BoldItalicSWC font.
This is a sample of Courier-BoldSWC font.
This is a sample of Courier-ItalicSWC font.
This is a sample of Courier-SWC font.
This is a sample of Dutch801-BoldItalicSWM font.
This is a sample of Dutch801-BoldSWM font.
This is a sample of Dutch801-ItalicSWM font.
This is a sample of Dutch801-RomanSWM font.
This is a sample of Dutch801SWC-Bold font.
This is a sample of Dutch801SWC-BoldItalic font.
This is a sample of Dutch801SWC-Italic font.
This is a sample of Dutch801SWC-Roman font.
This is a sample of Flareserif821-ExtraBoldSWC font.
This is a sample of Flareserif821-RomanSWC font.
This is a sample of Incised901SWC-Black font.
This is a sample of Incised901SWC-Italic font.
This is a sample of Incised901SWC-Roman font.
This is a sample of LetterGothic-BoldSWC font.
This is a sample of LetterGothic-ItalicSWC font.
This is a sample of LetterGothic-SWC font.
♓♒♓♦ ♓♦ ♋ ♦♋❍◘●♏ ◘♐ 💣◘❐♏♆♓■♑♌♋♦♦🖻☼♏♑◆●♋❐♦♆💣
(This is a sample of MoreWingbats-RegularSWM font.)

Resident Scalable Fonts (2)

This is a sample of OriginalGaramondSWC-Bold font.
This is a sample of OriginalGaramondSWC-BoldItalic font.
This is a sample of OriginalGaramondSWC-Italic font.
This is a sample of OriginalGaramondSWC-Roman font.
This is a sample of Ribbon131-RomanSWC font.
This is a sample of Swiss721-BoldObliqueSWM font.
This is a sample of Swiss721-BoldSWM font.
This is a sample of Swiss721-ObliqueSWM font.
This is a sample of Swiss721-SWM font.
This is a sample of Swiss742SWC-Bold font.
This is a sample of Swiss742SWC-BoldCondensed font.
This is a sample of Swiss742SWC-BoldCondensedItalic font.
This is a sample of Swiss742SWC-BoldItalic font.
This is a sample of Swiss742SWC-Italic font.
This is a sample of Swiss742SWC-ItalicCondensed font.
This is a sample of Swiss742SWC-Roman font.
This is a sample of Swiss742SWC-RomanCondensed font.
Τηισ ισ α σαμπλε οφ Σψμβολ–Σετ–ΣΩΜ φοντ.
(This is a sample of Symbol-Set-SWM font.)
This is a sample of ZapfHumanist601SWC-Bold font.
This is a sample of ZapfHumanist601SWC-BoldItalic font.
This is a sample of ZapfHumanist601SWC-Demi font.
This is a sample of ZapfHumanist601SWC-DemiItalic font.

KPDL Fonts (1)

This is a sample of Century-Schoolbook-SWA font.
This is a sample of Century-Schoolbook-ItalicSWA font.
This is a sample of Century-Schoolbook-BoldSWA font.
This is a sample of Century-Schoolbook-BoldItSWA font.
This is a sample of Courier-SWA font.
This is a sample of Courier-ItalicSWA font.
This is a sample of Courier-BoldSWA font.
This is a sample of Courier-BoldItalicSWA font.
This is a sample of Dutch801-RomanSWA font.
This is a sample of Dutch801-ItalicSWA font.
This is a sample of Dutch801-BoldSWA font.
This is a sample of Dutch801-BoldItalicSWA font.
This is a sample of ITC-Avant-Garde-BookSWA font.
This is a sample of ITC-Avant-Garde-BookObliqueSWA font.
This is a sample of ITC-Avant-Garde-DemiSWA font.
This is a sample of ITC-Avant-Garde-DemiObliqueSWA font.
This is a sample of ITC-Bookman-LightSWA font.
This is a sample of ITC-Bookman-LightItalicsSWA font.
This is a sample of ITC-Bookman-DemiSWA font.
This is a sample of ITC-Bookman-DemiItalicSWA font.
This is a sample of ITC-Zapf-Chancery-MediumItSWA font.
✳❋❊▲ ❊▲ ✿ ▲✿○❒●❋ ❑❊ ☆✳✣✍✺✿❒❋✍✣❊■✳✪✿▼▲✍✳✷✡ ❊❑■▼✎
(This is a sample of ITC-Zapf-Dingbats-SWA font.)
This is a sample of Swiss721-SWA font.
This is a sample of Swiss721-ObliqueSWA font.
This is a sample of Swiss721-BoldSWA font.
This is a sample of Swiss721-BoldObliqueSWA font.

KPDL Fonts (2)

This is a sample of Swiss721-NarrowSWA font.
This is a sample of Swiss721-NarrowObliqueSWA font.
This is a sample of Swiss721-NarrowBoldSWA font.
This is a sample of Swiss721-NarrowBoldObliqueSWA font.
Τηισ ισ α σαμπλε οφ Σψμβολ–Σετ–ΣΩΑ φοντ.
(This is a sample of Symbol-Set-SWA font.)
This is a sample of Zapf-Calligraphic801-SWA font.
This is a sample of Zapf-Calligraphic801-ItalicSWA font.
This is a sample of Zapf-Calligraphic801-BoldSWA font.
This is a sample of Zapf-Calligraphic801-BoldItSWA font.

Symbol Set

A *symbol* set is the set of alphabetical and numerical characters and symbols the printer prints. Each character is assigned to a particular character code.

The page printer offers not only a large selection of bitmap and scalable fonts but also a large selection of symbol sets (also referred to as *character sets*). This is because the printers the Kyocera page printer emulates have a number of their own symbol sets for printing in different languages and other purposes. Most of those symbol sets are the same regarding the letters of the alphabet, digits, and basic punctuation marks, but they differ considerably in their special symbols which lie in the upper half of the character code table, consisting of character codes 128 through 254 (hex 80 through FE).

The symbol set selection can also be made from the printer's control panel. See *Mode Select Menu* on the last page in this manual.

Table 3.1. Bitmap Fonts Symbol sets

SSET value	SSET ID	Symbol set
4	0D	ISO 60: Norway
9	0I	ISO 15: Italian
14	0N	ECMA-94 Latin 1
19	0S	ISO 11: Swedish
21	0U	ISO 6: ASCII
37	1E	ISO 4: U.K.
38	1F	ISO 69: France
39	1G	ISO 21: Germany
53	1U	US Legal
83	2S	ISO 17: Spain
277	8U	HP Roman-8
341	10U	PC-8
373	11U	PC-8 (D/N)
405	12U	PC-850

Table 3.2. Scalable Fonts Symbol sets

SSET value	SSET ID	Symbol set
4	0D	ISO-60 Norway
9	0I	ISO-15 Italian
14	0N	ECMA-94 Latin 1
19	0S	ISO-11 Sweden
21	0U	ISO-6 ASCII
37	1E	ISO-4 U.K.
38	1F	ISO-69 France
39	1G	ISO-21 Germany
53	1U	US Legal
78	2N	ISO Latin 2
83	2S	ISO-17 Spain
173	5M	PS math
174	5N	ISO Latin 5
180	5T	Windows Latin 5
202	6J	MS publishing
206	6N	ISO Latin 6
234	7J	Desktop
269	8M	Math 8
277	8U	HP Roman-8
293	9E	Windows Latin 2
298	9J	PC-1004
308	9T	PC-Turkish

(Continued on next page)

SSET value	SSET ID	Symbol set
309	9U	Windows
330	10J	PS text
341	10U	IBM PC-8
373	11U	IBM PC-8 (D/N)
394	12J	Macintosh
405	12U	IBM PC-850
501	15U	Pi font
565	17U	PC-852 Latin 2
620	19L	Winbalt
629	19U	Windows Latin 1
853	26U	PC-775

Chapter 4
Maintenance

This chapter explains how to maintenance the printer. This only covers replacing the toner container and cleaning parts such as the main charger unit and paper feed unit.

Toner Container Replacement..... 4- 2
Cleaning..... 4-10

Toner Container Replacement

When there is not enough toner, the printer displays the message "Toner low TK-30" in the message display. Be sure to prepare a new toner container when this message appears. If printing is continued in this condition, the printer will display the message "Replace Toner Clean printer" and stop when there is no more toner.

In this case, printing can be continued by replacing with a new toner kit.

Toner Container Replacement Interval

Assuming an average toner coverage of 5% (A4 or letter size, landscape feed and with Ecoprint mode turned off), the toner container will need replacing approximately once every 25,000* printed pages (A4 or letter size, 33,000 pages with TK-30H).

* In the case of a new printer in which a toner container has been installed for the first time, the number of pages that can be printed will be approximately 20,000 pages.

Toner Kit to be Used

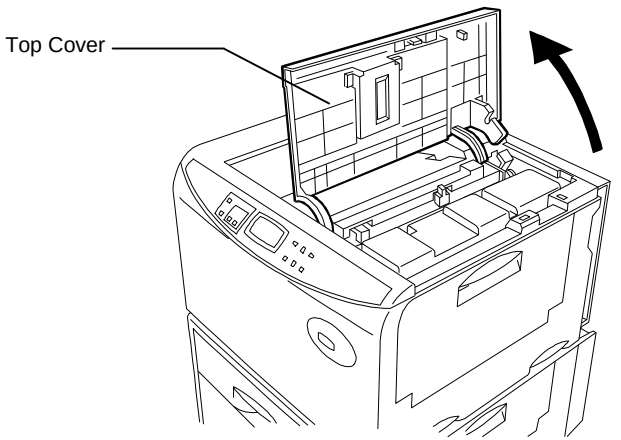
Name:	TK-30/TK-30H (The toner kit included with the printer is the TK-30.)
Description:	Toner Container
	Cleaning Cloth
	Cap for Old Toner Container
	Grid Cleaner
	Plastic Waste Bag (The toner kit supplied with the printer does not contain a plastic waste bag.)
	Instruction Manual

Notes

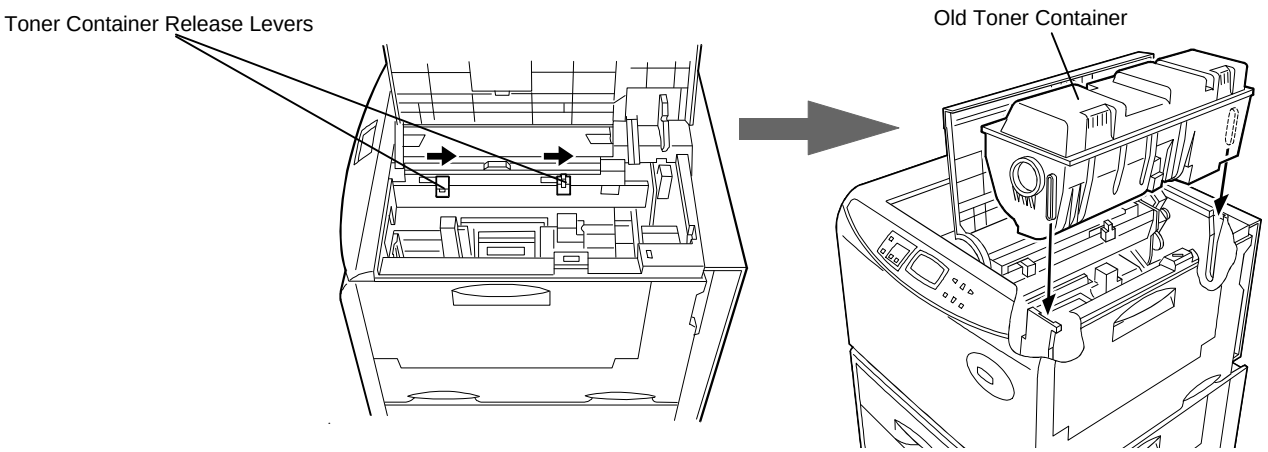
- Do not use the toner inside the old toner container.
- Be sure to distance items such as floppy disks during toner container replacement.
- Be sure to clean the inside of the printer along with replacing the toner container. For details, see **Cleaning** on page 4-10.
- Use of original Kyocera toner kits is highly recommended to prevent printer trouble and ensure the long life of the printer.

Replenishing Toner

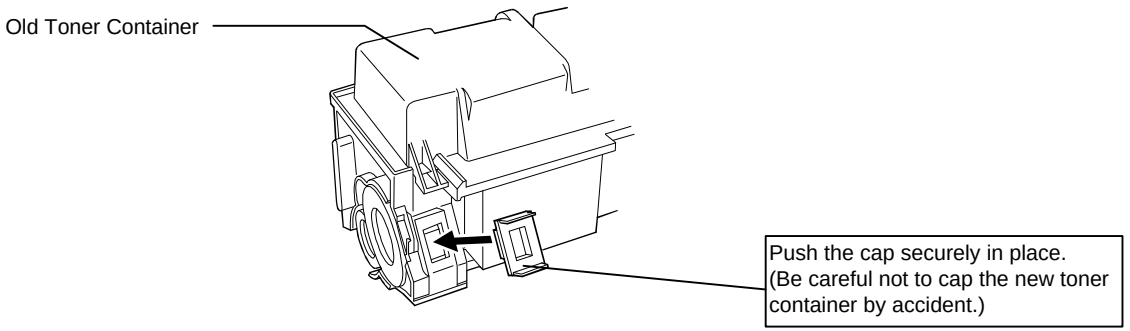
1. Open the top cover.



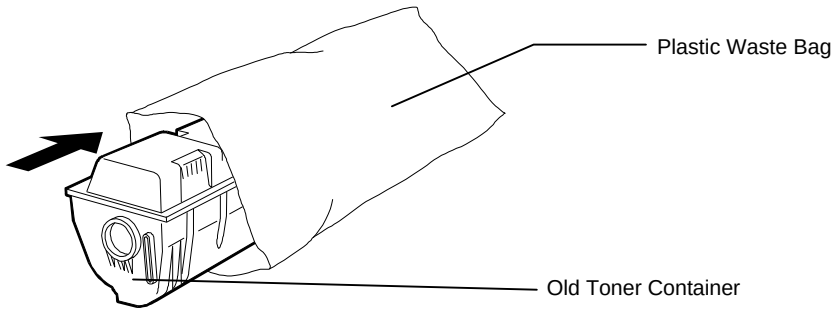
2. Slide the toner container release levers to the right until they stop and remove the old toner container. After removing it, take care not to tilt the toner container.



3. Cap the old toner container with the cap supplied in the new toner kit.



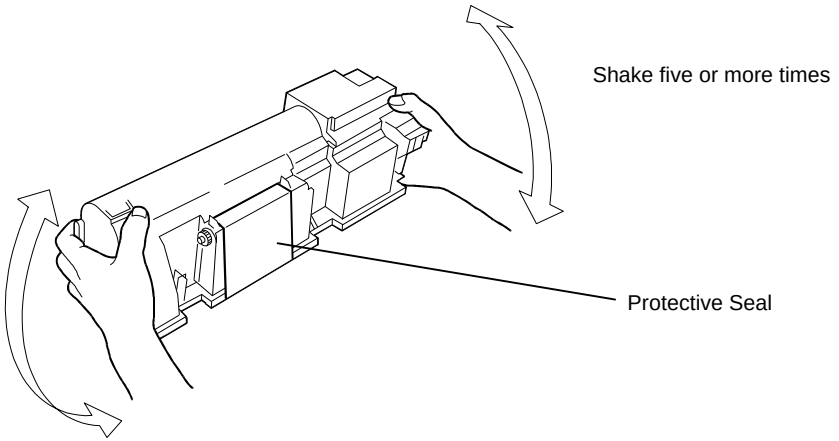
4. Dispose of the old toner container in the plastic waste bag supplied in the new toner kit so that toner does not scatter.



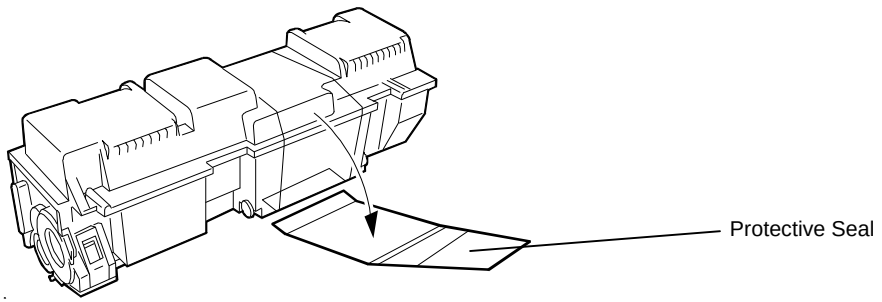
Note

Although the toner container is made from non-harmful, flammable material, be sure to dispose of this waste according to local laws and regulations.

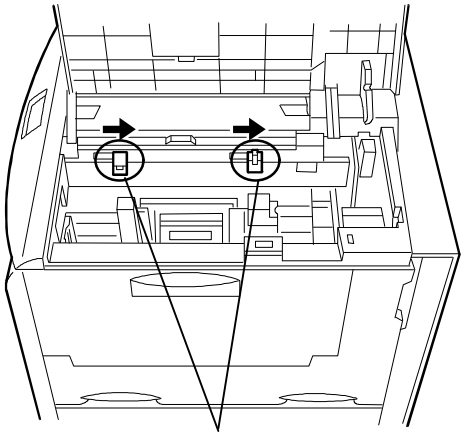
5. Take the new toner container from the toner kit. Shake the toner container five times or more with the protective seal facing up as shown in the figure in order to thoroughly mix the toner inside.



6. Carefully remove the protective seal.

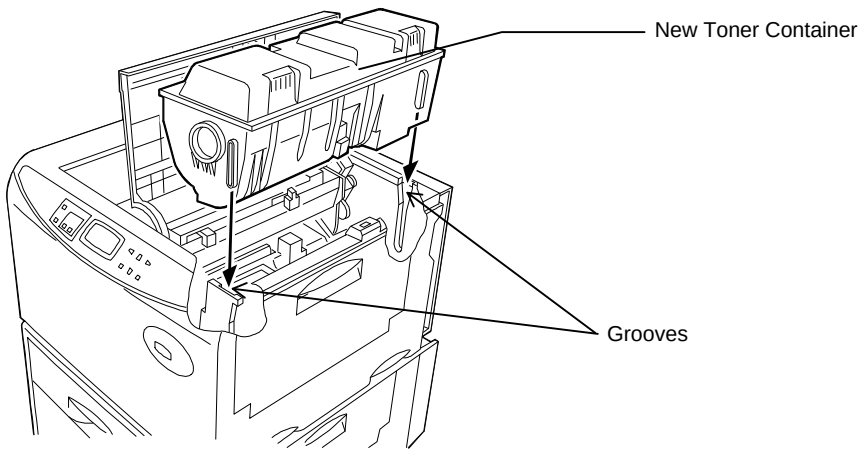


7. Check that the two toner container release levers are positioned to the right (released) as shown in the figure. If not positioned to the right, slide them to the right until they stop.

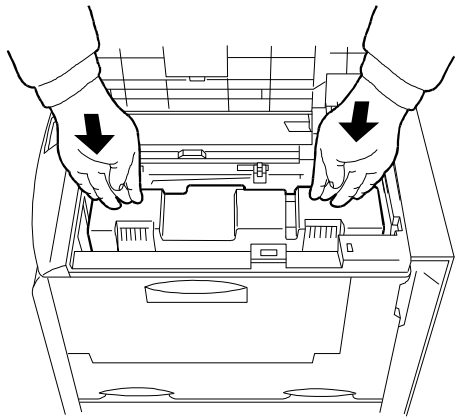


Toner Container Release Levers (Positioned to the right)

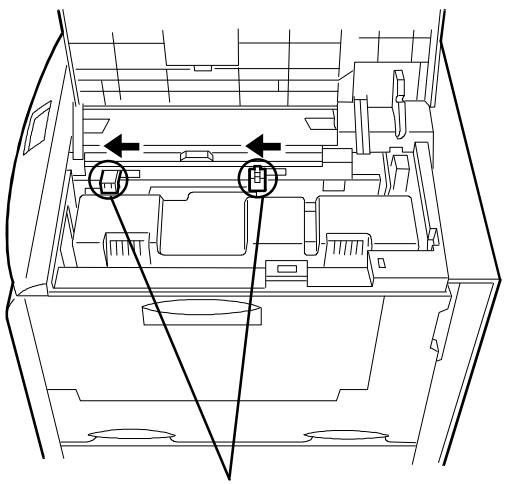
8. Align the ends of the toner container with the grooves to the left and right inside the printer as shown in the figure and install.



9. Check that the toner container is installed in the correct position, and push forcefully on the top of the toner container as shown in the figure.

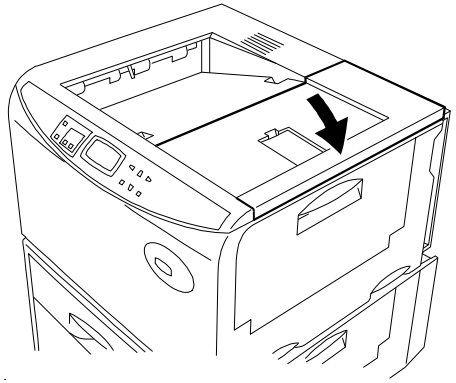


10. After the toner container is installed, slide the two toner container release levers to the left position (fixed) as shown in the figure.



Toner container release levers (Positioned to the left)

11. Close the top cover.



Cleaning

Be sure to clean the main charger unit and paper feed unit along with replacing the toner kit. Also be sure to clean the inside of the printer periodically (about once per month) to ensure optimum print quality even if you are not replacing the toner kit.

Note

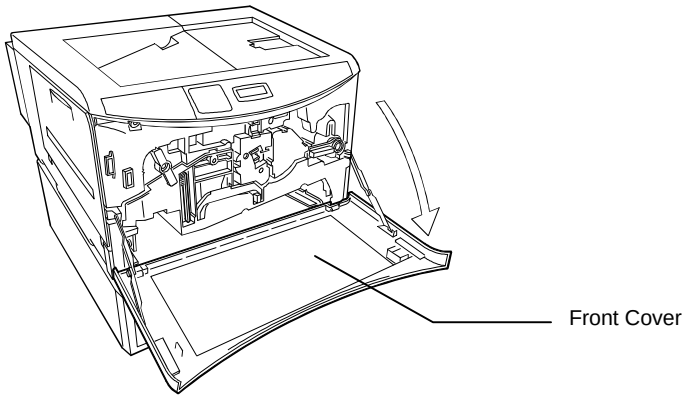
If the toner container has been replaced when the message `Replace Toner Clean printer` was displayed, the message `Clean printer Press CONTINUE` will be displayed after replacement. After cleaning the inside of the printer following the procedure shown below, press the **CONTINUE** key; the message will disappear and the printer will be ready for printing.

Main Charger Unit

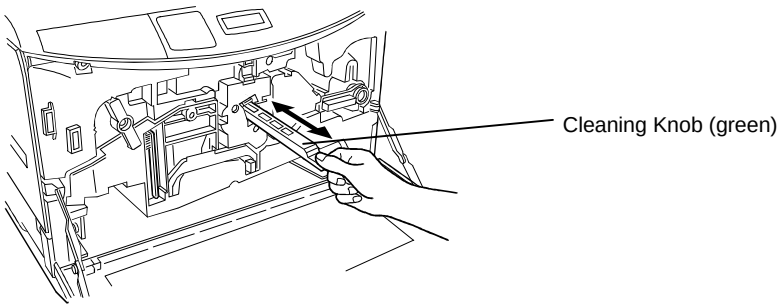
Cleaning the Charger Wire

Clean according to the following procedure.

1. Open the printer's front cover.



2. Pull the cleaning knob (green) located on the main charger unit slowly in and out a few times as shown in the figure. This cleans the charger wire inside the unit.



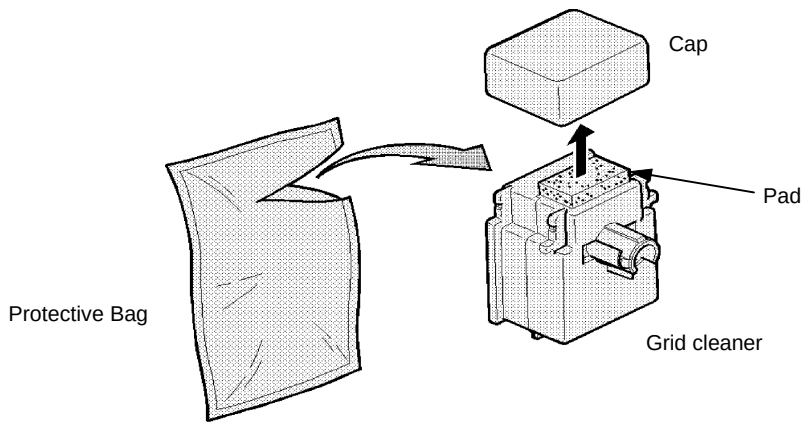
Cleaning the Grid

The main charger unit grid should be cleaned when the toner kit is changed.

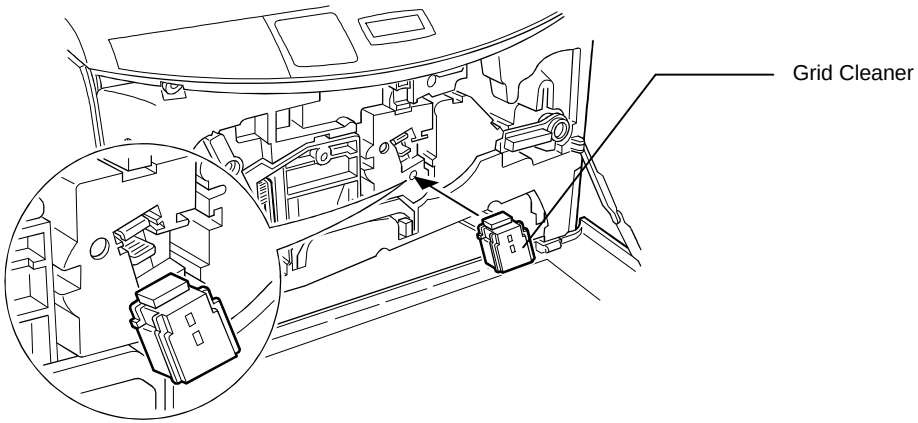
1. Take the grid cleaner from protective bag in the new toner kit, and remove the cap.

Note

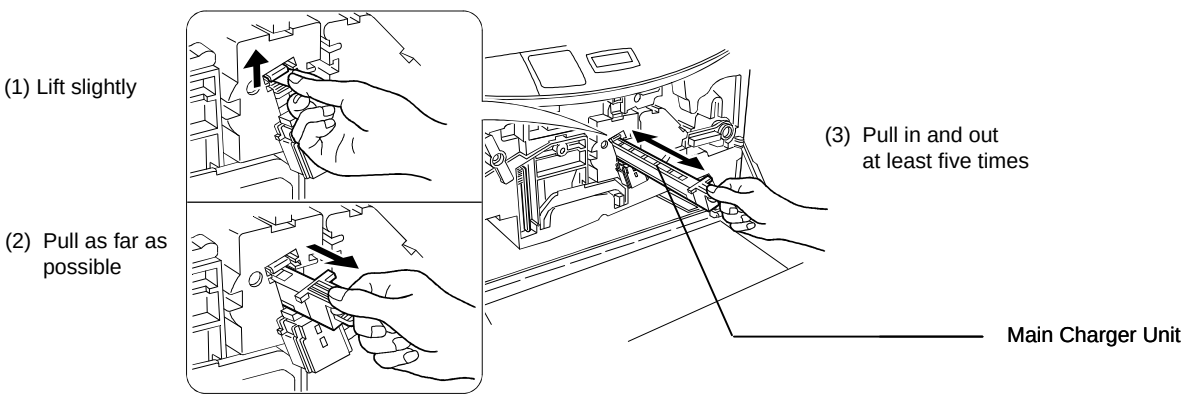
The grid cleaner pad is impregnated with water. Clean this part quickly to prevent the pad from drying out.



2. Attach the grid cleaner to the printer with the pad facing up as shown in the figure.

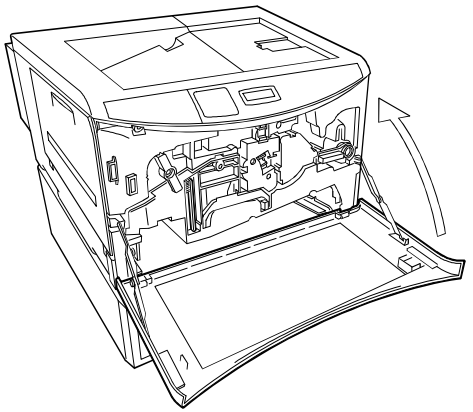


3. After attaching the grid cleaner, slightly lift the main charger unit and repeat the action of slowly pulling the cleaning knob in and out at least five times. This will clean the grid inside the main charger unit.



4. When the grid is clean, remove the grid cleaner from the printer and dispose of it. The grid cleaner is not re-usable.

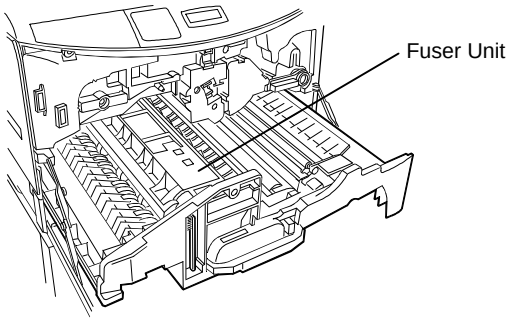
5. Close the front cover. This ends the charger unit cleaning procedure.



Paper Feed Unit

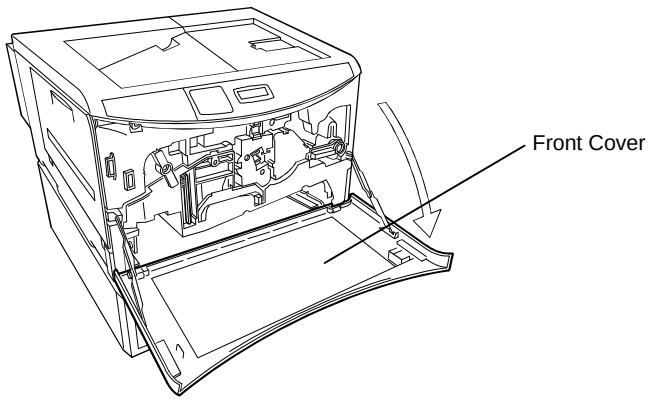
CAUTION

Wait a while after turning off the printer's power to allow the fuser unit to cool (about 20 minutes). Do not touch the fuser unit as this may result in a burn injury.

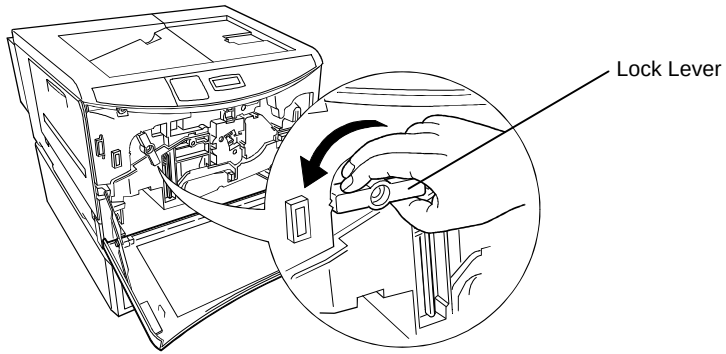


Print problems such as soiling of the reverse side of printed pages may occur if the paper feed unit becomes dirty. Clean the paper feed unit according to the following procedure.

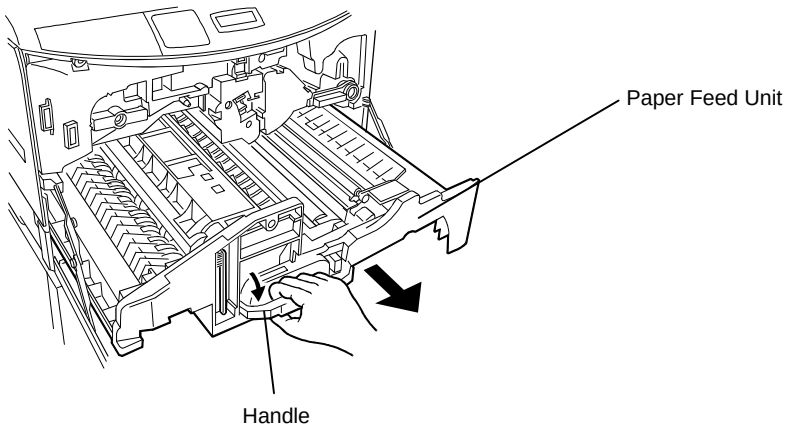
1. Open the printer's front cover.



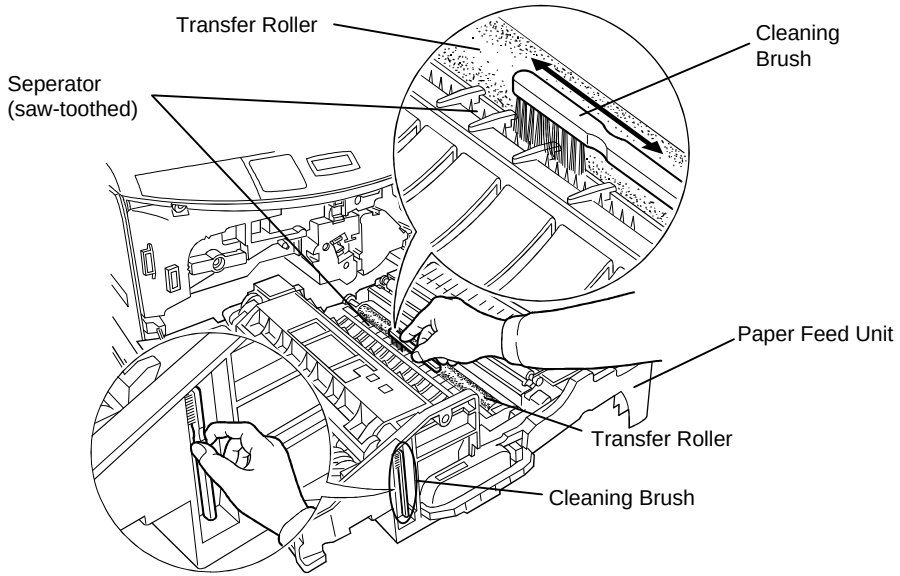
2. Turn the lock lever counterclockwise as shown in the figure to release the feed unit.



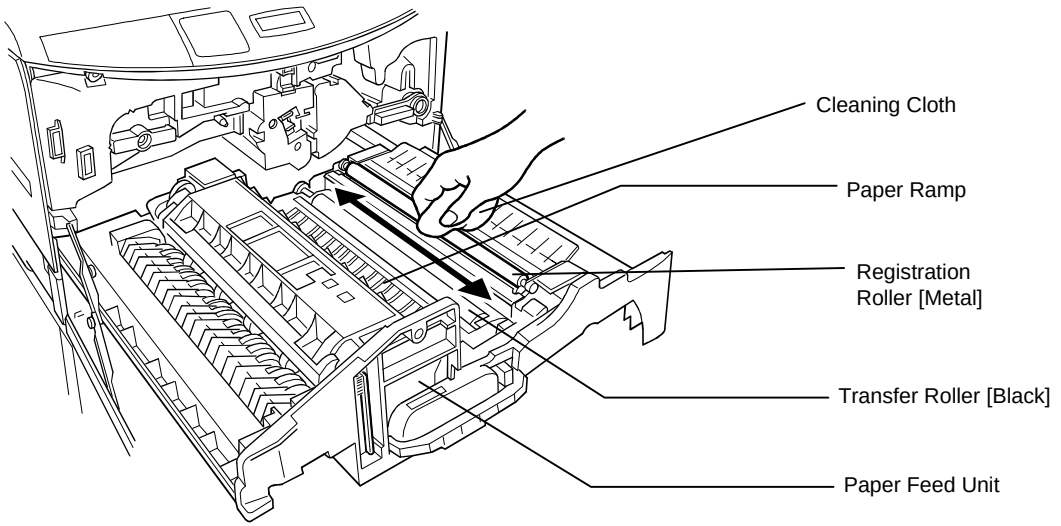
3. Grasp the handle on the paper feed unit and slowly pull it out.



4. Clean the saw-toothed seperator next to the transfer roller two or three times as shown in the diagram using the cleaning brush housed in the front panel of the paper feed unit. Return the cleaning brush after you have finished using it.



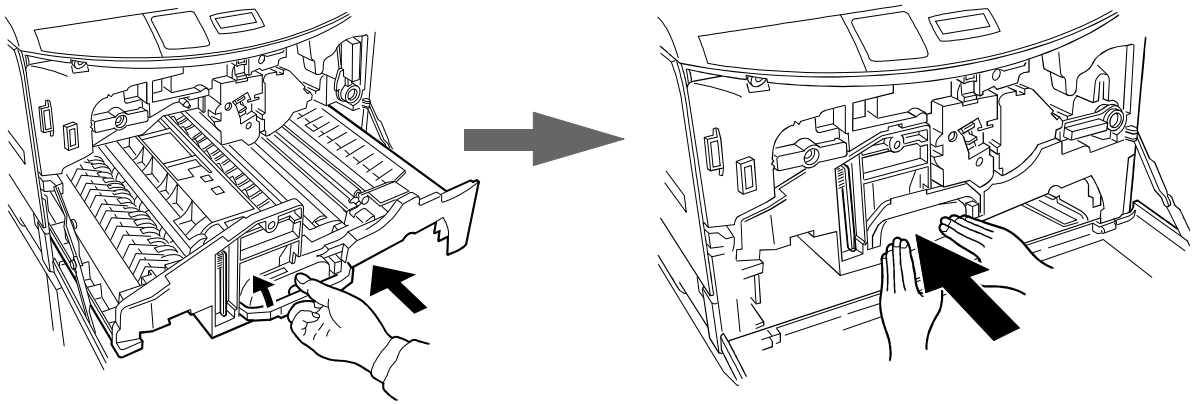
5. Wipe the paper dust on the registration roller and any dirt on the paper ramp using the cleaning cloth included in the toner kit.



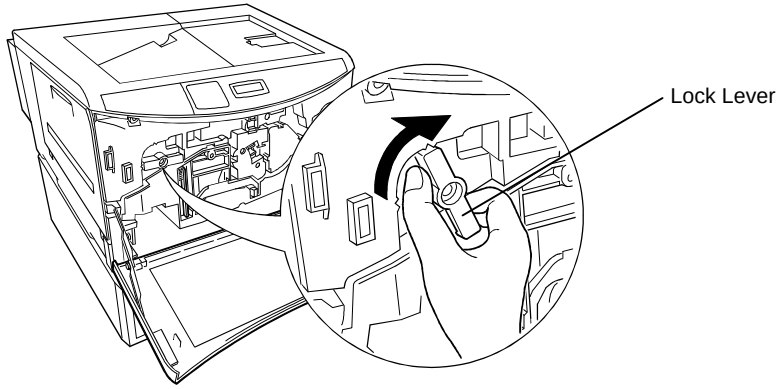
Note

Be careful not to touch the transfer roller during cleaning as this may adversely affect print quality.

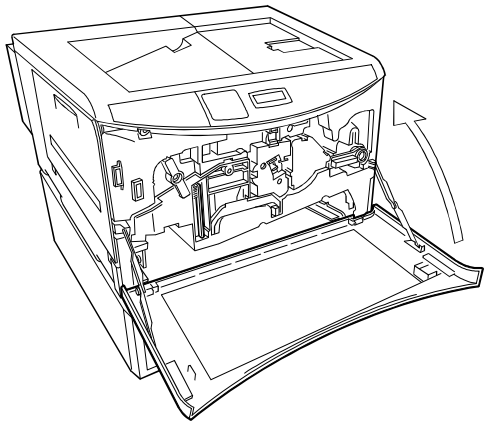
6. When you have finished cleaning the paper feed unit, push it back in until you feel it catch in place.



7. Turn the lock lever clockwise as shown in the figure to securely lock the feed unit.



8. Close the printer's front cover.



Chapter 5
Troubleshooting

This chapter explains how to handle printer problems which may occur. If a problem cannot be corrected, please contact your Kyocera dealer.

General Guide.....5- 2
Print Quality Problems.....5- 4
Indicators and Messages.....5- 8
Correcting a Paper Jam.....5-19

General Guide

There are quite a few printer problems which may be corrected by the user. This section explains how to correct these problems.

If some kind of printer problem should occur, check the following before concluding the printer is broken.

Symptom	Check Items		Corrective Action
The printer will not print.	Check the ON LINE indicator.	Off	Press the **ON LINE** key. If the indicator remains off and the printer still will not print even after pressing the **ON LINE** key, the problem may be power-related. Look through the items below and check anything that seems appropriate.
		Lit	See the appropriate item below.
	Check the print quality of a status page if one can be printed.	No problem	There may be a problem in the connection with the computer. Look through the items below and check anything that seems appropriate.
		There is a problem	See the section on “Print Quality Problems” (See page 5-4).
The ATTENTION indicator is lit.			See the section on “Indicators and Messages” (See page 5-8).
A maintenance message appears in the message display.			See the section on “Indicators and Messages” (See page 5-8).
Paper is jammed.			See the section on “Correcting a Paper Jam.”

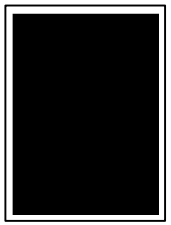
(Continued on next page)

Symptom	Check Items	Corrective Action
Nothing lights on the control panel even when power is turned on and the fan makes no noise.	Check that the power cord is properly plugged into the power outlet.	Turn off the printer's power, plug in the power cord securely, and try turning on the printer's power again.
	Check that the power switch is really in the on position.	
The printer prints a status page, but data from the computer is not being printed normally.	Check the interface cable.	Connect both ends of the interface cable securely. Try replacing the printer cable. For details on the parallel interface of this printer, see **Appendix C**.
	Check program files and application software.	Try printing another file or using another print command. If the problem occurs only with a specific file or application, check the printer settings for that application.

If you still cannot correct a printer problem even after checking the above, please contact your Kyocera dealer.

Print Quality Problems

There are many possible causes of the print quality problems, such as blank output, shown in the table below. The troubleshooting procedure for each type of problem is given below. If the checks explained in this section do not solve the problem, please contact your Kyocera dealer.

Printed Results	Corrective Action
All-black printout 	Please contact your Kyocera dealer.

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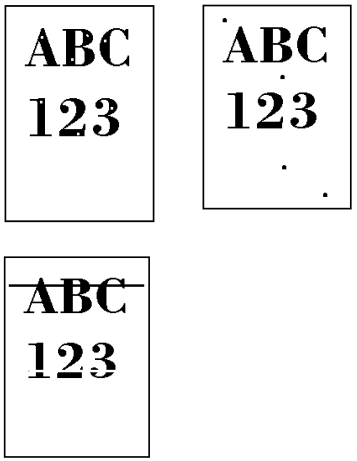
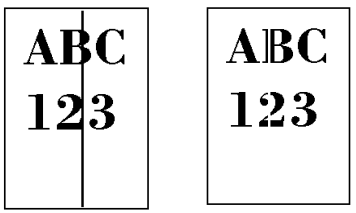
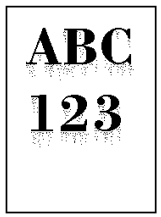
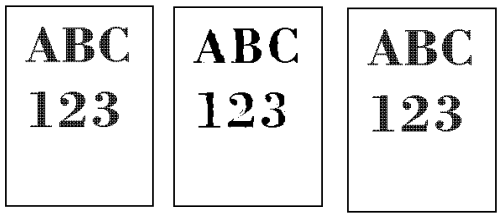
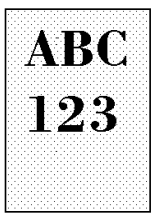
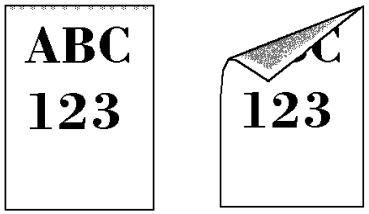
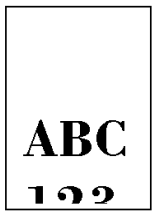
Printed Results	Corrective Action
Dropouts, horizontal streaks, stray dots 	Clean the charger wire. Open the printer's front cover and clean the charger wire using the green cleaning knob. (See **Chapter 4**.)
Black or white vertical streaks 	Check the message in the message display. If the Toner low TK-30 message is displayed and the toner indicator is flashing. (See **Chapter 4**.)
	Clean the charger wire Open the printer's front cover and clean the charger wire using the green cleaning knob. (See **Chapter 4**.)

(Continued on next page)

Printed Results	Corrective Action
The image is smeared.  	Clean the charger wire Open the printer's front cover and clean the charger wire using the green cleaning knob. (See **Chapter 4**.)
Faint or blurred printing  	Check the Ecoprint setting. (See **Chapter 2**.)
	Try setting toner control to high density. (See **Chapter 2**.)
	If the `Toner low TK-30` message is displayed and the toner indicator is flashing, install a new toner kit. (See **Chapter 4**.)
	Clean the charger wire Open the printer's front cover and clean the charger wire using the green cleaning knob. (See **Chapter 4**.)
Grey background.  	Check the control panel. If the `Toner low TK-30` message is displayed and the indicator is flashing, install a new toner kit. (See **Chapter 4**.)

(Continued on next page)

Printed Results	Corrective Action
	Clean the main charger wire. Open the printer's side cover. Pull the green main charger wire cleaning knob slowly in and out a few times. (See **Chapter 4**.)
	Check the main charger unit installation. Open the printer's side cover. Remove the main charger unit half way out, then reinstall it properly. (See **Chapter 4**.)
Dirt on the top edge or back of the paper  	Check the transfer roller. Pull out the paper feed unit and check whether the transfer roller is dirty. If so, print several pages to eliminate the dirt.
	Check the paper feed unit. Pull out the paper feed unit and check whether the inside of the printer is soiled with toner. If so, wipe it clean using the supplied cleaning cloth.
Characters out of position.  	Check the file or program. See if the problem is caused by an error with PRESCRIBE 2e commands. If the problem occurs only with a specific file or program, the most likely cause is an error in a parameter to a command or command syntax.

Indicators and Messages

This section explains the indicators on the control panel and the messages which appear in the message display and the appropriate corrective action to take in each case.

Indicators

Indicator	Condition	Corrective Action
	Flashing	The printer has run low on toner. The toner should be replaced as soon as possible. Clean the printer after replacement. (See **Chapter 4**.)
	Lit	Toner is low or has run out. Replace with a new toner container. (See **Chapter 4**.)
	Fast Flashing	Paper is jammed in the location flashing.
	Slow Flashing	The paper has run out in the paper cassette or multi-purpose tray. Add paper to the paper feed source. (See **Chapter 1**.)
	Lit	This indicates either the current paper feeder or the paper output point.
	Flashing	A paper jam has occurred in the optional duplex printing unit (DU-30/DU-31). Remove the paper jam referring to the instruction manual for the DU-30/DU-31.
	Lit	An optional duplex printing unit (DU-30/DU-31) has been attached, and the printer is printing in duplex printing mode.
 ATTENTION	Flashing	The printer is warming up (`Please wait`) or the printer has insufficient memory available. Confirm the message indicated on the message display.
	Lit	A message will be displayed in the message display. Take corrective action according to the message displayed. The table on the following page lists the corrective action to take in response to each message.

Maintenance Messages

Message	Corrective Action
Top cover Open	**The top cover is open.** Close it tightly.
Front cover Open	**The front cover is open.** Close it tightly.
Side cover Open	**The printer's side cover is open.** Close it tightly.
Paper feeder 1 side cover Open	**The paper feeder's side cover is open.** Close it tightly. If an optional paper feeder (PF-30) is installed, the paper feeder having the problem will be indicated number in the message. If the maximum of three feeders are installed, the upper feeder is 1, the middle feeder is 2, and the bottom feeder is 3.
Face-down tray paper full	**The face-down tray has become full.** You must remove all printed pages from the face-down tray. The face-down tray can hold approximately 500 sheets.
Add paper (paper source) (paper size) (media type)	**The paper source is out of paper.** Add paper to the paper cassette or multi-purpose tray. Not only the paper source, but also the paper size and media type set for the paper source in question are displayed.
Set paper Press CONTINUE	Add a sheet of paper to the multi-purpose tray, and press the **CONTINUE** key. Printing will start.

(Continued on next page)

Message	Corrective Action
Load (paper source) (paper size) (media type)	**The paper size or type does not match the printing data.** One of MP tray, Cassette 1 to 6, or EF/UF (Envelope feeder/ Universal feeder) will be displayed In place of "paper source". Load the paper displayed on the message display and press the **CONTINUE** key to print. Or, pressing the **FEED** key without pressing the **CONTINUE** key, will cause Use alternative? to be displayed, and a different paper source can be selected to supply paper. The paper source changes each time the **FEED** key is pressed. And press the **MODE** key to display Paper handling >. Press the ▸ key and you can change the paper source setting using the **+** or **–** key to select. Load paper appropriate for the paper source and press the **EXIT** key to print.
Load Cassette # (paper size) (media type)	**The paper size does not match.** The size of the paper in the cassette is different to the size specified by the application software or by PRESCRIBE 2e command. Put paper of the specified size into the cassette. (# represents the cassette number.) If the **CONTINUE** key is pressed, printing will be resumed. However, if more than one sheet is to be printed, the same message will again be displayed from the second sheet onward. You can abandon printing by pressing the **CANCEL** key.
Cassette # not loaded	**The cassette is not closed securely,** Close it tightly. (# represents the cassette number.)
Paper jam Open front cover	**Paper has become jammed.** Open the front cover. The location of the paper jam is displayed in the message display.
Paper jam ################	**This message appears when the front cover is open during a paper jam.** Letters A through I and numbers 1 through 6 will appear in place of the #'s. For details on the meaning of the text displayed, see page 5-19. A label displaying these number indications is also attached to the back of the front panel. The indicator on the front panel also flashes the location of the paper jam.

(Continued on next page)

Message	Corrective Action
Warning Low memory	**The printer's internal memory is running low.** Remove any unnecessary download fonts and/or macros. You can check the amount of user memory currently available by printing a status page.
Toner low TK-30	**There is not enough toner inside the toner container.** There is not enough toner. Prepare a new toner container. (See **Chapter 4**.)
Replace Toner Clean printer	**There is no more toner in the toner container.** The printer has stopped because there is no more toner. Replace with a new toner kit. After replacing, be sure to clean the printer. (See **Chapter 4**.)
Option interface Error	**A failure has occurred with the option interface.** Check the option interface installed on the printer.
HARDDISK error20	**Install the harddisk unit into the OPT2 slot.** This message is displayed when the optional harddisk unit is accidentally installed into the OPT1 slot. Be sure to install the harddisk unit in the OPT2 slot. Be sure to turn off the printer's power before removing the incorrectly installed harddisk.
RAM DISK error ## Press CONTINUE	**Check the error code displayed in the place of ## and refer to the appropriate description below.** 01: Abnormal format. Try turning the power off and on again. 02: RAM DISK mode is Off. Turn RAM DISK mode On. 03: Cannot write to the disk system because it is write protected. Remove the write protection. 04: No disk space. Clean up files. 05: Specified file not on disk. 06: No memory for use by disk system. Expand printer memory. 10: Cannot format disk because host data is spooled there. Format the disk after Ready is displayed.

(Continued on next page)

Message	Corrective Action
RAM DISK error ## Press CONTINUE	85: VMB: Alias error (Alias setting failure or no virtual bin corresponds to the alias.) Make the setting again. 86: VMB: Password error (No password specification, mistaken password, or password setting failure) Check the password. 87: VMB: Although an attempt was made to use a virtual bin job stack, the stack size reached the maximum limit. Output the job or raise the maximum limit. 88: VMB: There was a job or page which could not be read out during virtual bin job output (the job is destroyed). 89: VMB: No job in the virtual bin specified for output or that virtual bin is not being used. Check the bin. 97: MPS: A non-volatile job has reached the maximum limit and no more data can be saved. Clean up the job or raise the maximum limit. 98: MPS: There was a page which could not be read out within a job (the job is destroyed). 99: MPS: No job in the virtual bin specified for output or that page is missing.
Virtual Mail Box full	**The virtual mail box area is full.** Print out accumulated VMB data. If the VMB function is being implemented by RAM DISK, increase the RAM DISK size.
Clean printer Press CONTINUE	**Please clean the inside of the printer. See Chapter 4.** After cleaning the inside of the printer, press the **CONTINUE** key and the printer will be ready for printing. This message will be displayed when replacing the toner container after the message Replace Toner Clean printer has been displayed.
Missing Toner kit TK-30	**No toner container is installed.** Install the toner container. (See **Chapter 1**.) The printer does not operate when this message is displayed.

(Continued on next page)

Message	Corrective Action
Missing Drum unit	**The drum unit is not installed.** Securely install the drum unit in the printer. (For details, see the maintenance kit description manual.)
Missing Developing unit	**The developing unit is not installed.** Securely install the developing unit in the printer. (For details, see the maintenance kit description manual.)
Missing Fuser unit	**The fuser unit is not installed.** Securely install the fuser unit in the printer. (For details, see the maintenance kit description manual.)
Install MK	**The maintenance kit (MK-33) needs to be replaced.** Replace the maintenance kit since the total number of printed pages has reached 350,000. Contact the licensed dealer of Kyocera from which you purchased the printer or service outlet. The maintenance kit includes a drum unit, developer unit and so on.
Call service person##: ########	**A failure requiring the attention of service personnel has occurred.** A failure requiring the attention of service personnel has occurred and the printer has stopped. The corresponding error code and total printed pages are displayed in the message display (part indicated by #'s).

Error Messages

Message	Corrective Action
Memory overflow Press CONTINUE	**Current print processing cannot continue due to insufficient memory.** Check available user memory by printing a status page, and either remove unnecessary download fonts and/or macros or expand the printer's memory. Press the **CONTINUE** key to print data as far as it was stored. You can abandon printing by the **CANCEL** key.
Print overrun Press CONTINUE	**Current print processing cannot continue due to insufficient memory.** The data transferred to the printer was too complex to print on a page. Check available user memory by printing a status page, and either remove unnecessary download fonts and/or macros or expand the printer's memory. **Note:** After this message has been displayed, Page protect mode will be on. To maintain optimum use of memory during printing, display >Page protect from the mode select menu, and re-select Auto. Press the **CONTINUE** key to print data as far as it was stored. You can abandon printing by the **CANCEL** key.
KPDL Error Press CONTINUE	**Current print processing cannot continue.** To print out a error report, display >Print KPDL errs from the mode select menu, and select On. Press the **CONTINUE** key to resume printing. You can abandon printing by the **CANCEL** key.
MEMORY CARD err Insert again	**The memory card is missing.** This message appears when the memory card has been removed from the memory card slot during memory card operations. Re-insert the same memory card in the same slot. the printer will continue with memory card processing.

(Continued on next page)

Message	Corrective Action
Insert the same MEMORY CARD	**Insert the same memory card.** This message appears when the memory card has been removed from the memory card slot during memory card operations and replaced with a different memory card. Re-insert the same memory card in the same slot. The printer will continue with memory card processing.
Warning battery MEMORY CARD	**The memory card's battery is low.** This message appears when the printer is in the ready state and the battery of the memory card installed in the printer is low. You can still enter the memory card mode, but the battery should be changed as soon as possible.
Battery error MEMORY CARD	**Insert a new battery in the memory card.** This message appears when the printer is in the ready state and the battery in the memory card is missing or completely dead. Memory card operations are not possible. Insert a new battery in the memory card.
Format error MEMORY CARD	**The memory card requires formatting.** This message appears when the printer is in the ready state and the memory card is not formatted. Be sure to format the memory card. (See **Chapter 2**.)

(Continued on next page)

Message	Corrective Action
MEMORYCARD err ## Press CONTINUE	This message appears when an error occurs during access to the memory card using the PRESCRIBE 2e RWER (ICCD) command or from the printer's control panel. Look at the error code given in place of ## and refer to the corresponding description given below. Note that only error codes 09 and 11 are displayed due to memory card operations made from the control panel. 01:Data or memory card capacity is too large. • This error code appears if an attempt is made to write more than 32 MB of data to a memory card or if the capacity of the memory card installed in the printer is more than 32 MB. Decrease the data being written to the memory card to less than 32 MB. Note that only memory card of 32 MB and less can be used by this printer. • This error code appears when a data name not existing on the memory card is specified. Check the data names on the memory card. 02: The memory card does not meet specifications. This memory card cannot be used by this printer. Insert a memory card which can be used by this printer. (See "Memory Card" of **Chapter 2**.) 03: The memory card is not supported by this printer. Only JEIDA Ver. 4.2/PCMCIA Ver.2.1 memory card can be used by this printer. 04: The card is an S-RAM or flash card which cannot be used by this printer. 05: There is no battery in the memory card. Replace the battery in the memory card with a new one. 06: The memory card is write-protected. Cancel the write-protection of the memory card. 07: The memory card requires formatting. Format the memory card from the control panel. 09: The capacity of the memory card is insufficient. This error code appears when an attempt is made to write more data on the memory card than available memory. To halt the writing of data, first stop data transmissions from the computer, and then the printer's **CANCEL** key. Press the **FORM FEED** key if the message Waiting will appear in the message display. The message display will return to reading Ready.

(Continued on next page)

Message	Corrective Action
MEMORYCARD err ## Press CONTINUE	11: The memory card is full of data items. The number of data items which can be written on the memory card is limited to 127. Pressing the **CANCEL** key will restore the message Ready in the message display. 13: This is a logical error. Try substituting another flash memory card. 15: The flash memory card in question is not supported by this printer. 17: The flash memory card cannot be written due to insufficient printer memory. Either delete unnecessary macros and/or fonts stored in the printer, or expand the printer's available memory. 18: This is a write error. Try substituting another flash memory card. (Error codes 13 through 18 apply only to a flash memory card.)
>Read fonts ? Failed	**The font cannot be read due to insufficient memory.** A download font could not be loaded into printer memory due to insufficient available printer memory. Either remove unnecessary download fonts and/or macros or expand the printer's memory.
I/F occupied	**The interface selected is currently being used.** The interface is secured while the interface name displayed in the message display is flashing even if the printer is in the ready state. How long this takes depends on the interface release timeout (FRPO J2) setting. This message appears, and then the ATTENTION indicator lights, when an attempt is made to select a secured interface from the control panel or when an attempt is made to perform memory card operations while the interface indicator is flashing. Repeat operations after releasing the interface.

(Continued on next page)

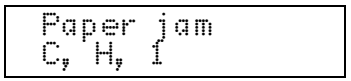
Message	Corrective Action
Processing PAR FIT A4	**Compressed data is printed due to insufficient memory.** Compressed data is printed due to insufficient memory when FIT flashes in the resolution indicator. The quality of printed data is reduced when this occurs. FIT will continue flashing even after printing is finished. The resolution indicator will automatically return to reading 600 dpi when any key is pressed, when a timeout occurs, or when subsequent data is received. Expand printer memory to avoid this error.
Processing PAR 600 A4 ↓ Processing PAR 300 A4	**600 dpi processing cannot be performed due to insufficient memory**. When 300 flashes in the resolution indicator even though the printer was set to 600 dpi, the printer automatically set resolution to 300 dpi due to insufficient memory and continued printing. The resolution indicator will automatically return to reading 600 dpi when any key is pressed, when a timeout occurs, or when subsequent data is received. Expand printer memory to avoid this error.

Correcting a Paper Jam

This section describes how to remove paper when it jams in the printer. The printer will stop whenever paper jams in the printer or paper is not fed from a cassette. The printer will go offline and the message `Paper jam Open front cover` will appear in the message display.

Opening the printer's front cover will cause the message display to change. It will now indicate the coded location (A through I and 1 through 6) of the paper jam.

Example

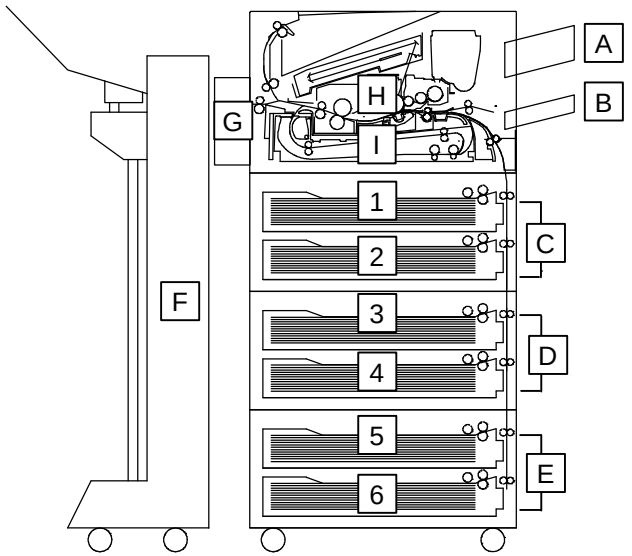


In this example, paper is jammed in the paper feeder (C), paper feed unit (H), and in the upper cassette (1). The corrective action to take in cases like this is explained using actual examples beginning from page 5-23.

The meanings of symbols appearing on the message display and the corresponding locations of paper jams are given in the table on the next page. Be sure to correct paper jams according to the procedure given on the following pages.

Locating and Correcting Paper Jams

Message Display Indicator and Paper Jam Location

Indicator	Meaning of Indicator	Corresponding Printer Location
A	Optional paper feeder (EF-1 or UF-1)	
B	Multi-purpose tray	
C	Paper feeder included with printer	
D	Optional paper feeder (PF-30)	
E	Optional paper feeder (PF-30)	
F	Optional paper stacker (DF-30/DF-31, ST-30, or SO-30)	
G	Face-up output tray/ Face-down output tray	
H	Paper feed unit	
I	Optional duplex printing unit (DU-30/DU-31)	
1	Cassette 1	
2	Cassette 2	
3	Cassette 3	
4	Cassette 4	
5	Cassette 5	
6	Cassette 6	

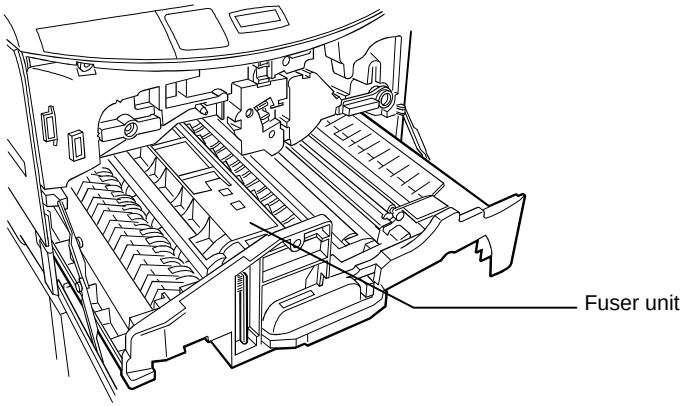
A label titled “Locating and Correcting Paper Jams” is also attached to the back of the front cover.

The indicator on the printer's front panel also flashes the location of paper jams.

Correcting Paper Jams

CAUTION

Pull out the paper feed unit and wait a while to allow the fuser unit to cool. Do not touch the fuser unit as this may result in a burn injury.



WARNING

Take care not to leave any small pieces of paper in the printer when removing paper jams as this may result in fire.

Note that data remaining in the printer will be lost if power is turned off while correcting a paper jam.

After checking the location of the paper jam using the table on the previous page, take corrective action according to the table on the next page. After removing all jammed paper, the printer will automatically resume printing.

Indicator	Meaning of Indicator	Corresponding Printer Location
A	Check the optional paper feeder (EF-1 or UF-1). (Only when installed)	When a paper jam occurs in the optional feeder, pull it out carefully. (For details, read the instruction manual for each separate option.)
B	Check the multi-purpose tray.	When a paper jam occurs in the multi-purpose tray, first completely remove all jammed paper and then open and close the front cover.
C, D, E	Check the optional paper feeder (PF-30). (D and E are only displayed when an optional PF-30 is installed.)	Open the side cover of the paper feeder indicated and remove the jammed paper. (See Figure 5.1.)
F	Check the optional unit (DF-30, DF-31, SO-30, or ST-30). (Only when installed)	Remove the paper jammed in the paper stacker. (For details, read the paper stacker instruction manual.)
G	Check the face-up output tray.	If printing stops before a page is completely output, carefully remove that sheet of paper. (See Figure 5.2.)
	Check the face-down output tray.	If printing stops before a page is completely output, carefully remove that sheet of paper.
H	Check the paper feed unit.	Open the front cover and carefully pull out the paper feed unit as far as it will go. If paper is jammed in the registration rollers, remove it by the easiest means possible. (See Figure 5.3.) Pull jammed paper out of the fuser unit in the same manner. (See Figure 5.4.) After all paper has been completely removed, return the paper feed unit.
	Check the fuser unit.	Open the front cover and carefully pull out the paper feed unit as far as it will go. Open the fuser unit cover (grasp the tab [green]) and check inside the fuser unit. Jammed paper may sometimes be left inside the fuser unit. (See Figure 5.5.)
I	Check the optional duplex printing unit (DU-30/DU-31). (Only when installed)	Open the front cover, pull out the duplex printing unit and remove the jammed paper. (For details, read the duplex printing unit instruction manual.)
1 — 6	Check the cassette indicated.	Pull out the cassette indicated and remove the jammed paper. After all paper has been completely removed, open and close the front cover.

Example

In the example given on page 5-19, paper is jammed in the paper feeder (C), the upper cassette (1), and the paper feed unit (H).

```
Paper jam
C, H, 1
```

1. When paper jams in multiple locations such as in this example, **begin taking corrective action from the location displayed at left**. After the paper jam in the paper feeder (C) is corrected, the display will change as follows.

```
Paper jam
H, 1
```

2. Next, pull out the paper feed unit and remove the jammed paper. After removing the paper the display will change as follows.

```
Front cover
Open
```

3. Close the front cover. This completes taking care of this paper jam.

Notes

- Sometimes the page on which the paper jam occurred will not be re-printed depending on the location of the paper jam.
- Note that your hands may become dirty from unfused toner when removing paper jams.

Frequent occurrence of paper jams may indicate you are using a paper specification which does not suit the printer. If this appears to be the case, please switch to a different type of paper. Also be sure to check that the paper type setting is correct. Suitable paper specifications are described in detail in **Appendix B**.

If you have tried changing paper types and paper jams still occur frequently, there may be some problem with the printer. In this case, please contact your Kyocera dealer.

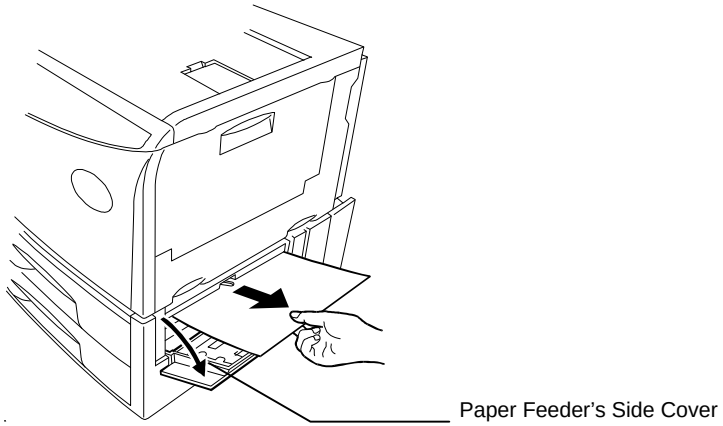


Figure 5.1 Paper jam in paper feeder unit

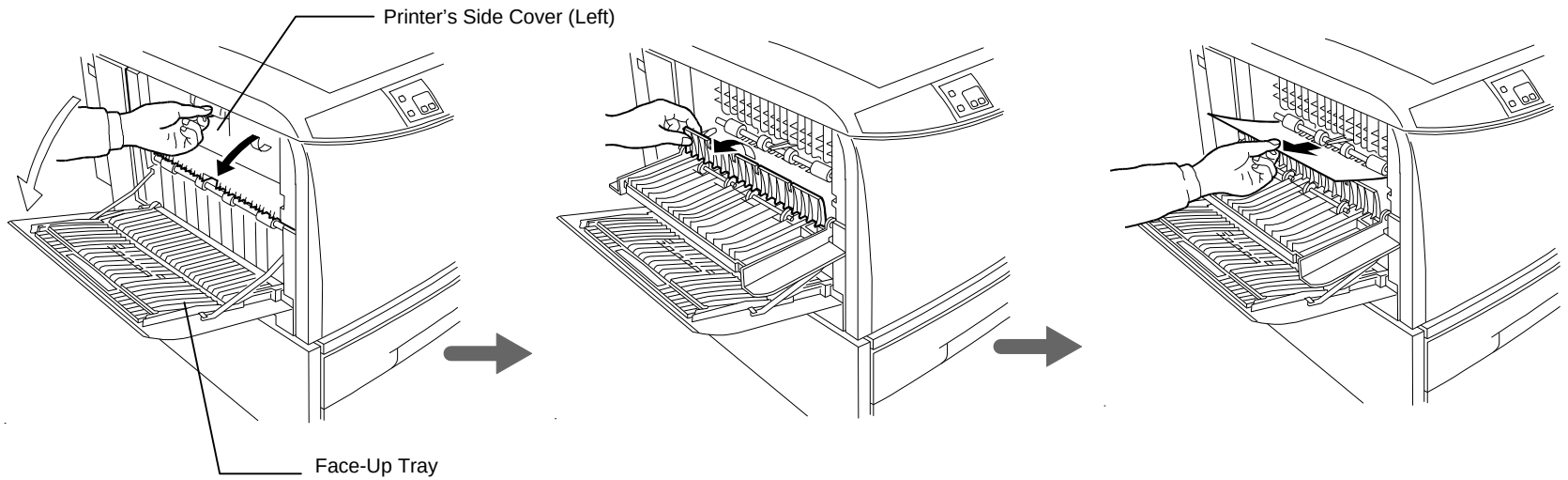


Figure 5.2 Paper jam in face-up tray

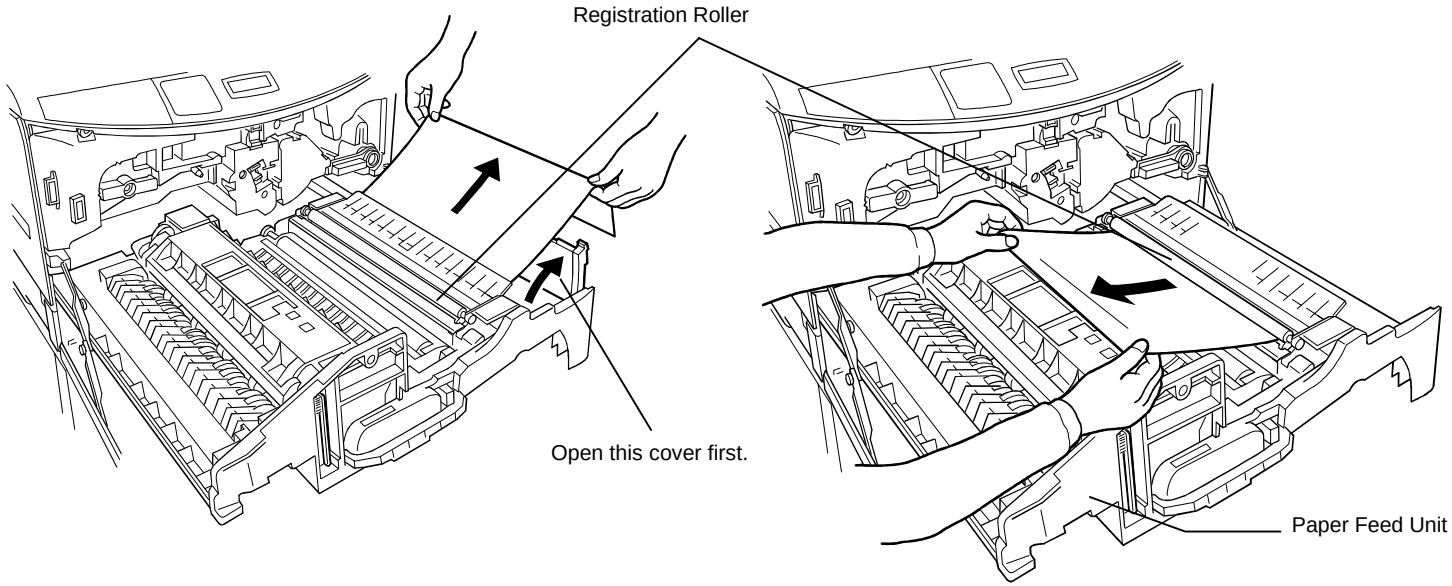


Figure 5.3. Paper jammed in paper feed unit

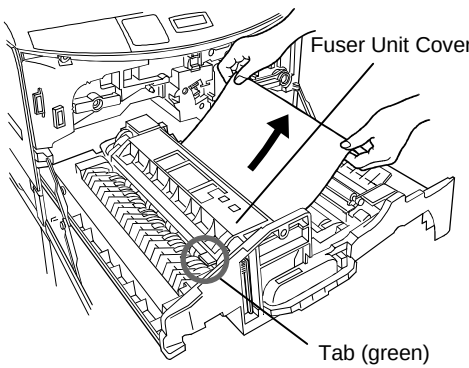


Figure 5.4. Paper jammed at the fuser unit

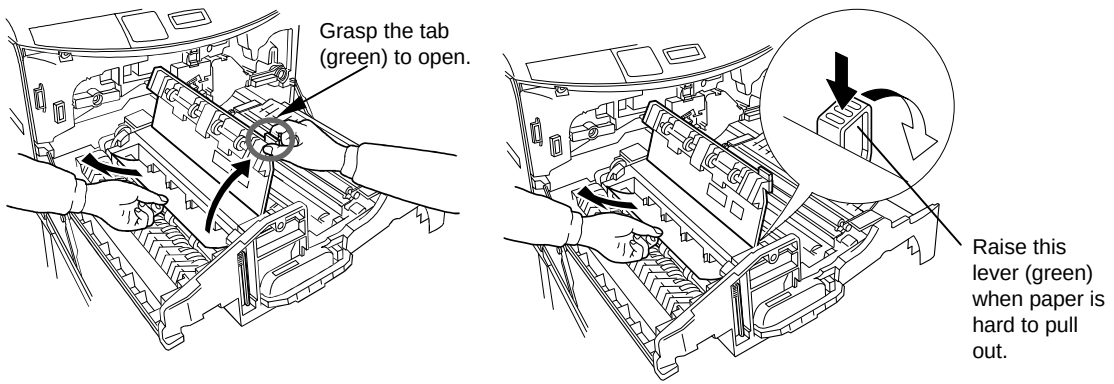


Figure 5.5. Paper jammed inside the fuser unit

Chapter 6
Symbol Set Tables

The following tables show all the characters included in the most common symbol sets available with the five emulations.

HP LaserJet 5M Symbol Sets

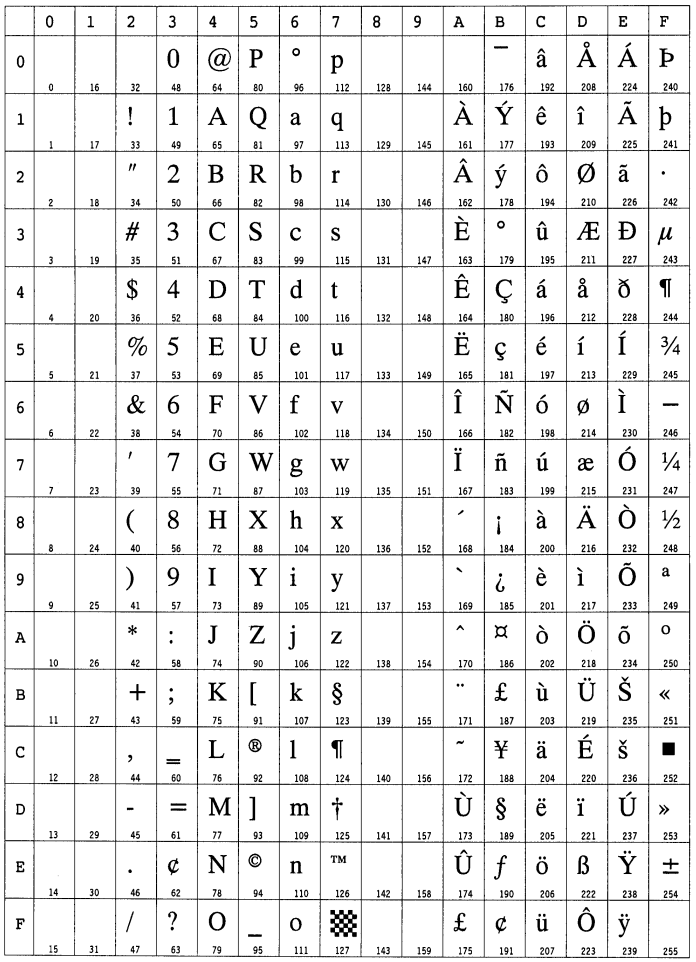
LaserJet 5M HP Roman-8 (8U)

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	0	16	32	0	@	P	‘	p	128	144	160	¯	â	Å	Á	Þ
1	1	17	!	1	A	Q	a	q	129	145	À	Ý	ê	î	Ã	þ
2	2	18	"	2	B	R	b	r	130	146	Â	ý	ô	Ø	ã	·
3	3	19	#	3	C	S	c	s	131	147	È	°	û	Æ	Ð	µ
4	4	20	$	4	D	T	d	t	132	148	Ê	Ç	á	å	ð	¶
5	5	21	%	5	E	U	e	u	133	149	Ë	ç	é	í	Í	¾
6	6	22	&	6	F	V	f	v	134	150	Î	Ñ	ó	ø	Ì	–
7	7	23	’	7	G	W	g	w	135	151	Ï	ñ	ú	æ	Ó	¼
8	8	24	(	8	H	X	h	x	136	152	´	¡	à	Ä	Ò	½
9	9	25	)	9	I	Y	i	y	137	153	`	¿	è	ì	Õ	a
A	10	26	*	:	J	Z	j	z	138	154	^	¤	ò	Ö	õ	o
B	11	27	+	;	K	[	k	{	139	155	¨	£	ù	Ü	Š	«
C	12	28	,	<	L	\	l	|	140	156	~	¥	ä	É	š	■
D	13	29	-	=	M	]	m	}	141	157	Ù	§	ë	ï	Ú	»
E	14	30	.	>	N	^	n	~	142	158	Û	ƒ	ö	ß	Ÿ	±
F	15	31	/	?	O	_	o	▩	143	159	£	¢	ü	Ô	ÿ	

LaserJet 5M ECMA-94 Latin 1 (0N)

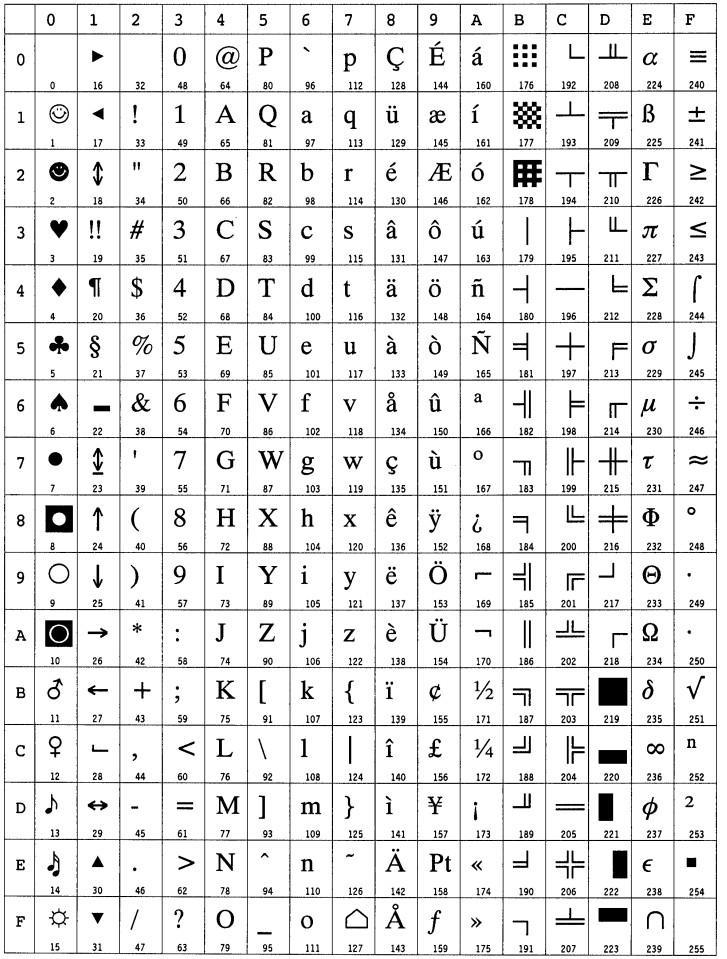
	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	0	16	32	0	@	P	`	p	128	144	160	°	À	Ð	à	ð
1	1	17	!	1	A	Q	a	q	129	145	¡	±	Á	Ñ	á	ñ
2	2	18	"	2	B	R	b	r	130	146	¢	2	Â	Ò	â	ò
3	3	19	#	3	C	S	c	s	131	147	£	3	Ã	Ó	ã	ó
4	4	20	$	4	D	T	d	t	132	148	¤	´	Ä	Ô	ä	ô
5	5	21	%	5	E	U	e	u	133	149	¥	µ	Å	Õ	å	õ
6	6	22	&	6	F	V	f	v	134	150	¦	¶	Æ	Ö	æ	ö
7	7	23	'	7	G	W	g	w	135	151	§	·	Ç	×	ç	÷
8	8	24	(	8	H	X	h	x	136	152	¨	¸	È	Ø	è	ø
9	9	25	)	9	I	Y	i	y	137	153	©	1	É	Ù	é	ù
A	10	26	*	:	J	Z	j	z	138	154	a	o	Ê	Ú	ê	ú
B	11	27	+	;	K	[	k	{	139	155	«	»	Ë	Û	ë	û
C	12	28	,	<	L	\	l	|	140	156	¬	¼	Ì	Ü	ì	ü
D	13	29	-	=	M	]	m	}	141	157	-	½	Í	Ý	í	ý
E	14	30	.	>	N	^	n	~	142	158	®	¾	Î	Þ	î	þ
F	15	31	/	?	O	_	o	▩	143	159	¯	¿	Ï	ß	ï	ÿ

LaserJet 5M US Legal (1U)



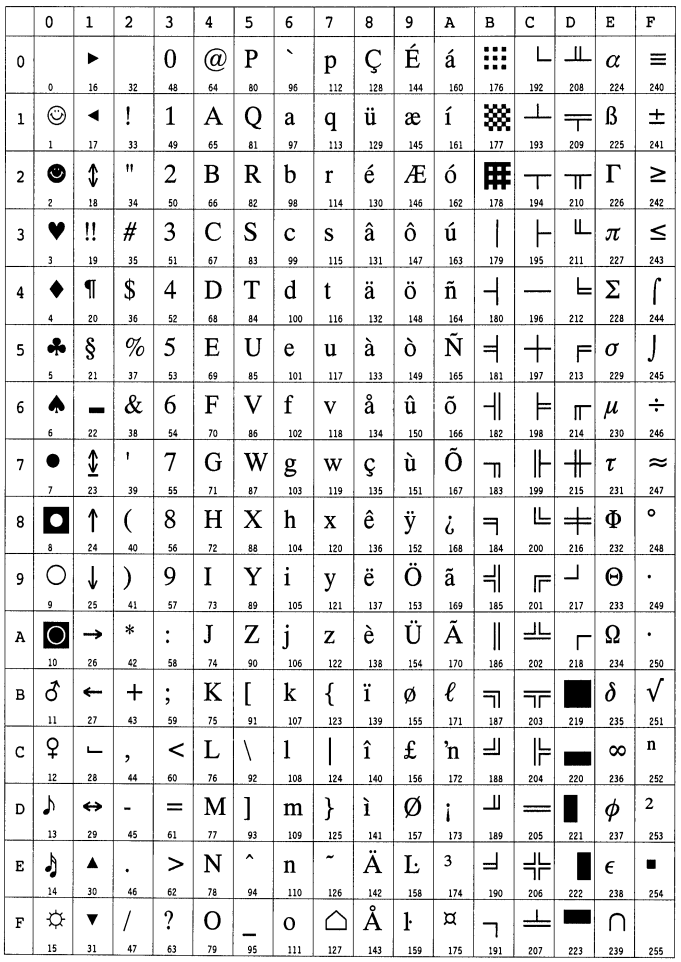
LaserJet 5M IBM PC-8 (10U)

To have the printer print the characters of decimal numbers of 7 through 15, and 27, set the printer to the HP PCL transparent mode (ESC&p#X).



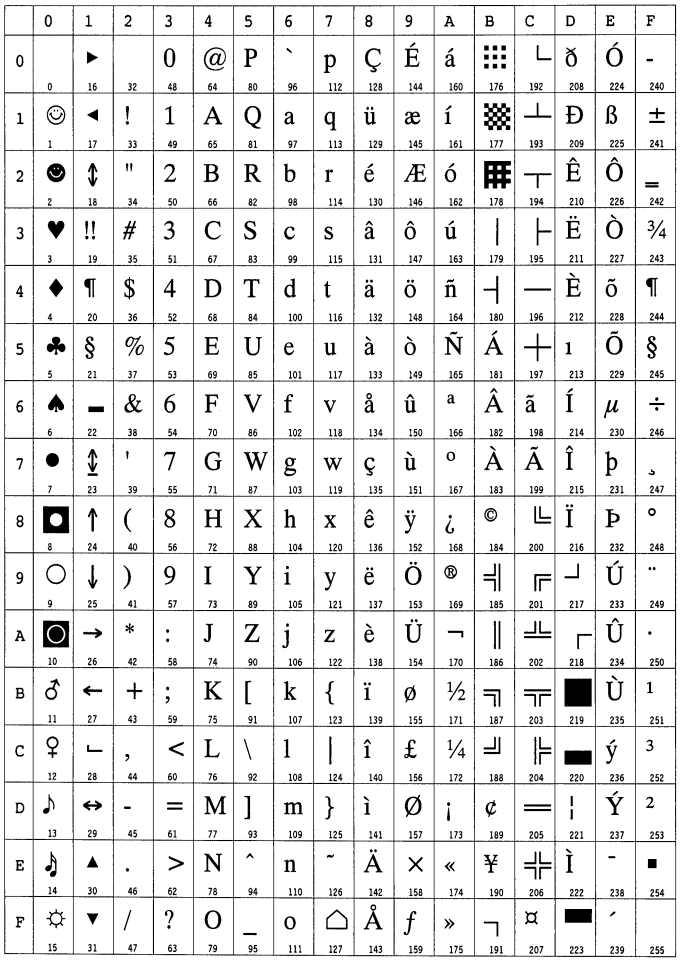
LaserJet 5M IBM PC-8 (D/N) (11U)

To have the printer print the characters of decimal numbers of 7 through 15, and 27, set the printer to the HP PCL transparent mode (ESC&p#X).



LaserJet 5M IBM PC-850 (12U)

To have the printer print the characters of decimal numbers of 7 through 15, and 27, set the printer to the HP PCL transparent mode (ESC&p#X).



LaserJet 5M ISO Latin 6 (6N)

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	0	16	32	0 48	@ 64	P 80	` 96	p 112	128	144	160	° 176	Ā 192	Đ 208	ā 224	ð 240
1	1	17	! 33	1 49	A 65	Q 81	a 97	q 113	129	145	Ą 161	ą 177	Á 193	Ņ 209	á 225	ņ 241
2	2	18	" 34	2 50	B 66	R 82	b 98	r 114	130	146	Ē 162	ē 178	Â 194	Õ 210	â 226	ō 242
3	3	19	# 35	3 51	C 67	S 83	c 99	s 115	131	147	Ģ 163	ģ 179	Ã 195	Ó 211	ã 227	ó 243
4	4	20	$ 36	4 52	D 68	T 84	d 100	t 116	132	148	Ī 164	ī 180	Ä 196	Ô 212	ä 228	ô 244
5	5	21	% 37	5 53	E 69	U 85	e 101	u 117	133	149	Ĩ 165	ĩ 181	Å 197	Õ 213	å 229	õ 245
6	6	22	& 38	6 54	F 70	V 86	f 102	v 118	134	150	Ķ 166	ķ 182	Æ 198	Ö 214	æ 230	ö 246
7	7	23	' 39	7 55	G 71	W 87	g 103	w 119	135	151	§ 167	· 183	Į 199	Ũ 215	į 231	ũ 247
8	8	24	(40	8 56	H 72	X 88	h 104	x 120	136	152	Ļ 168	ļ 184	Č 200	Ø 216	č 232	ø 248
9	9	25	) 41	9 57	I 73	Y 89	i 105	y 121	137	153	Đ 169	đ 185	É 201	Ų 217	é 233	ų 249
A	10	26	* 42	: 58	J 74	Z 90	j 106	z 122	138	154	Š 170	š 186	Ę 202	Ú 218	ę 234	ú 250
B	11	27	+ 43	; 59	K 75	[91	k 107	{ 123	139	155	Ŧ 171	ŧ 187	Ë 203	Û 219	ë 235	û 251
C	12	28	, 44	< 60	L 76	\ 92	l 108	| 124	140	156	Ž 172	ž 188	Ė 204	Ü 220	ė 236	ü 252
D	13	29	- 45	= 61	M 77	] 93	m 109	} 125	141	157	- 173	— 189	Í 205	Ý 221	í 237	ý 253
E	14	30	. 46	> 62	N 78	^ 94	n 110	~ 126	142	158	Ũ 174	ū 190	Î 206	Þ 222	î 238	þ 254
F	15	31	/ 47	? 63	O 79	_ 95	o 111	▩ 127	143	159	Ŋ 175	ŋ 191	Ï 207	ß 223	ï 239	ĸ 255

LaserJet 5M PS Math (5M)

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	0	16	32	0 48	≅ 64	Π 80	¯ 96	π 112	128	144	160	° 176	ℵ 192	∠ 208	◇ 224	240
1	1	17	! 33	1 49	A 65	Θ 81	α 97	θ 113	129	145	ϒ 161	± 177	ℑ 193	∇ 209	⟨ 225	⟩ 241
2	2	18	∀ 34	2 50	B 66	P 82	β 98	ρ 114	130	146	′ 162	″ 178	ℜ 194	® 210	® 226	∫ 242
3	3	19	# 35	3 51	X 67	Σ 83	χ 99	σ 115	131	147	≤ 163	≥ 179	℘ 195	© 211	© 227	⌠ 243
4	4	20	∃ 36	4 52	Δ 68	T 84	δ 100	τ 116	132	148	⁄ 164	× 180	⊗ 196	TM 212	TM 228	⎮ 244
5	5	21	% 37	5 53	E 69	Y 85	ε 101	υ 117	133	149	∞ 165	∝ 181	⊕ 197	∏ 213	∑ 229	⌡ 245
6	6	22	& 38	6 54	Φ 70	ς 86	φ 102	ϖ 118	134	150	ƒ 166	∂ 182	∅ 198	✓ 214	⌈ 230	⌉ 246
7	7	23	∍ 39	7 55	Γ 71	Ω 87	γ 103	ω 119	135	151	♣ 167	• 183	∩ 199	· 215	⎮ 231	⎮ 247
8	8	24	(40	8 56	H 72	Ξ 88	η 104	ξ 120	136	152	♦ 168	÷ 184	∪ 200	¬ 216	⌊ 232	⌋ 248
9	9	25	) 41	9 57	I 73	Ψ 89	ι 105	ψ 121	137	153	♥ 169	≠ 185	⊃ 201	∧ 217	⌈ 233	⌉ 249
A	10	26	* 42	: 58	ϑ 74	Z 90	φ 106	ζ 122	138	154	♠ 170	≡ 186	⊇ 202	∨ 218	⎮ 234	⎮ 250
B	11	27	+ 43	; 59	K 75	[91	κ 107	{ 123	139	155	↔ 171	≈ 187	⊄ 203	⇔ 219	⌊ 235	⌋ 251
C	12	28	, 44	< 60	Λ 76	∴ 92	λ 108	| 124	140	156	← 172	… 188	⊂ 204	⇐ 220	⌈ 236	⌉ 252
D	13	29	− 45	= 61	M 77	] 93	μ 109	} 125	141	157	↑ 173	| 189	⊆ 205	⇑ 221	{ 237	} 253
E	14	30	. 46	> 62	N 78	⊥ 94	ν 110	~ 126	142	158	→ 174	— 190	∈ 206	⇒ 222	⌊ 238	⌋ 254
F	15	31	/ 47	? 63	O 79	_ 95	ο 111	127	143	159	↓ 175	↵ 191	∉ 207	⇓ 223	⎮ 239	255

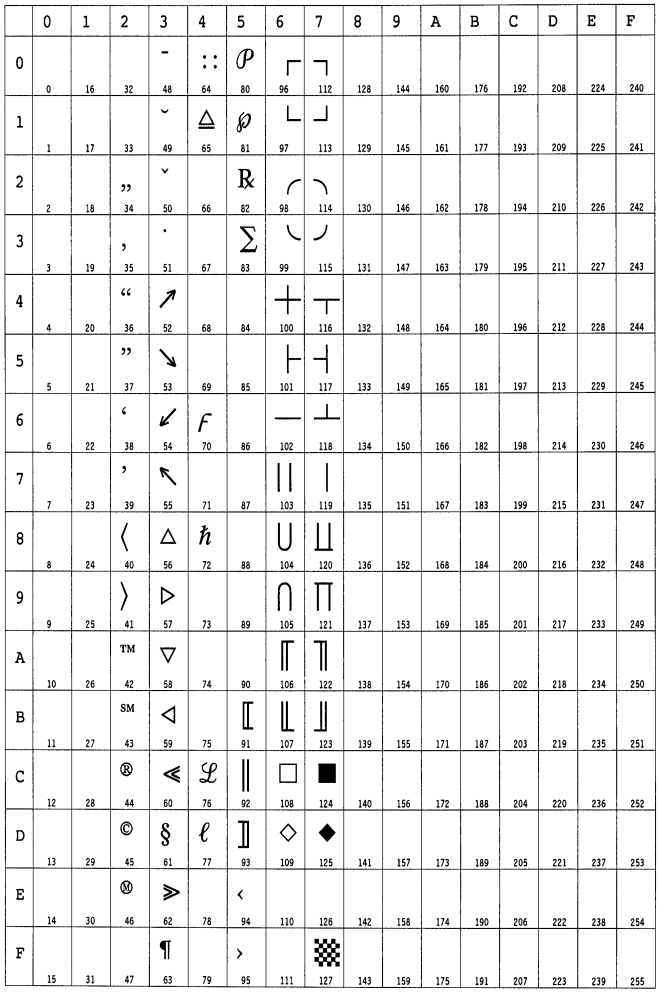
LaserJet 5M PS Text (10J)

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	0	16	32	0 48	@ 64	P 80	‘ 96	p 112	128	144	160	176	192	— 208	224	240
1	1	17	! 33	1 49	A 65	Q 81	a 97	q 113	129	145	¡ 161	– 177	` 193	209	Æ 225	æ 241
2	2	18	" 34	2 50	B 66	R 82	b 98	r 114	130	146	¢ 162	† 178	´ 194	210	226	242
3	3	19	# 35	3 51	C 67	S 83	c 99	s 115	131	147	£ 163	‡ 179	ˆ 195	211	a 227	243
4	4	20	$ 36	4 52	D 68	T 84	d 100	t 116	132	148	/ 164	· 180	˜ 196	212	228	244
5	5	21	% 37	5 53	E 69	U 85	e 101	u 117	133	149	¥ 165	181	¯ 197	213	229	ı 245
6	6	22	& 38	6 54	F 70	V 86	f 102	v 118	134	150	ƒ 166	¶ 182	˘ 198	214	230	246
7	7	23	’ 39	7 55	G 71	W 87	g 103	w 119	135	151	§ 167	• 183	˙ 199	215	231	247
8	8	24	(40	8 56	H 72	X 88	h 104	x 120	136	152	¤ 168	‚ 184	¨ 200	216	Ł 232	ł 248
9	9	25	) 41	9 57	I 73	Y 89	i 105	y 121	137	153	' 169	„ 185	201	217	Ø 233	ø 249
A	10	26	* 42	: 58	J 74	Z 90	j 106	z 122	138	154	“ 170	” 186	° 202	218	Œ 234	œ 250
B	11	27	+ 43	; 59	K 75	[91	k 107	{ 123	139	155	« 171	» 187	¸ 203	219	° 235	ß 251
C	12	28	, 44	< 60	L 76	\ 92	l 108	| 124	140	156	‹ 172	… 188	204	220	236	252
D	13	29	- 45	= 61	M 77	] 93	m 109	} 125	141	157	› 173	‰ 189	˝ 205	221	237	253
E	14	30	. 46	> 62	N 78	^ 94	n 110	~ 126	142	158	fi 174	190	˛ 206	222	238	254
F	15	31	/ 47	? 63	O 79	_ 95	o 111	127	143	159	fl 175	¿ 191	ˇ 207	223	239	255

LaserJet 5M Math8 (8M)

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	0	16	32	0 48	∴ 64	Π 80	∵ 96	π 112	128	144	160	¯ 176	⊕ 192	Å 208	⌈ 224	⌉ 240
1	1	17	✓ 33	1 49	A 65	P 81	α 97	ρ 113	129	145	↑ 161	∀ 177	⊙ 193	⊣ 209	⌊ 225	⌋ 241
2	2	18	″ 34	2 50	B 66	Σ 82	β 98	σ 114	130	146	→ 162	∃ 178	⊗ 194	⊢ 210	⌠ 226	⌡ 242
3	3	19	° 35	3 51	Γ 67	T 83	γ 99	τ 115	131	147	↓ 163	⊤ 179	⊖ 195	⌙ 211	⎧ 227	⎫ 243
4	4	20	∞ 36	4 52	Δ 68	ϒ 84	δ 100	υ 116	132	148	← 164	⊥ 180	∅ 196	∍ 212	⎩ 228	⎭ 244
5	5	21	÷ 37	5 53	E 69	Φ 85	ϵ 101	ϕ 117	133	149	⇑ 165	∪ 181	∧ 197	∫ 213	⌡ 229	⎪ 245
6	6	22	∝ 38	6 54	Z 70	X 86	ζ 102	χ 118	134	150	⇒ 166	∩ 182	∨ 198	∮ 214	ϕ 230	⎪ 246
7	7	23	′ 39	7 55	H 71	Ψ 87	η 103	ψ 119	135	151	⇓ 167	∈ 183	⊻ 199	∠ 215	⌡ 231	√ 247
8	8	24	(40	8 56	Θ 72	Ω 88	θ 104	ω 120	136	152	⇐ 168	∋ 184	¬ 200	∅ 216	⎲ 232	⎺ 248
9	9	25	) 41	9 57	I 73	∇ 89	ι 105	ϑ 121	137	153	⇕ 169	∉ 185	○ 201	ℵ 217	‖ 233	〉 249
A	10	26	× 42	e 58	K 74	∂ 90	κ 106	φ 122	138	154	↔ 170	⊂ 186	· 202	ℶ 218	∠ 234	⎵ 250
B	11	27	+ 43	ε 59	Λ 75	ς 91	λ 107	ϖ 123	139	155	⇕ 171	⊃ 187	• 203	ℷ 219	⁄ 235	⎲ 251
C	12	28	, 44	< 60	M 76	≤ 92	μ 108	≃ 124	140	156	⇔ 172	⊄ 188	● 204	ℭ 220	– 236	〈 252
D	13	29	− 45	= 61	N 77	≠ 93	ν 109	≡ 125	141	157	⇄ 173	⊅ 189	○ 205	ℑ 221	= 237	∓ 253
E	14	30	. 46	> 62	Ξ 78	≥ 94	ξ 110	≠ 126	142	158	⇆ 174	⊆ 190	† 206	ℜ 222	* 238	± 254
F	15	31	/ 47	≈ 63	O 79	_ 95	o 111	127	143	159	→ 175	⊇ 191	‡ 207	ℨ 223	≅ 239	255

LaserJet 5M Pi font (15U)



	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	0	16	32	48	64	80	96	112	128	144	160	176	192	208	224	240
1	1	17	33	49	65	81	97	113	129	145	161	177	193	209	225	241
2	2	18	34	50	66	82	98	114	130	146	162	178	194	210	226	242
3	3	19	35	51	67	83	99	115	131	147	163	179	195	211	227	243
4	4	20	36	52	68	84	100	116	132	148	164	180	196	212	228	244
5	5	21	37	53	69	85	101	117	133	149	165	181	197	213	229	245
6	6	22	38	54	70	86	102	118	134	150	166	182	198	214	230	246
7	7	23	39	55	71	87	103	119	135	151	167	183	199	215	231	247
8	8	24	40	56	72	88	104	120	136	152	168	184	200	216	232	248
9	9	25	41	57	73	89	105	121	137	153	169	185	201	217	233	249
A	10	26	TM 42	58	74	90	106	122	138	154	170	186	202	218	234	250
B	11	27	SM 43	59	75	91	107	123	139	155	171	187	203	219	235	251
C	12	28	® 44	60	76	92	108	124	140	156	172	188	204	220	236	252
D	13	29	© 45	§ 61	77	93	109	125	141	157	173	189	205	221	237	253
E	14	30	Ⓜ 46	62	78	94	110	126	142	158	174	190	206	222	238	254
F	15	31	47	¶ 63	79	95	111	127	143	159	175	191	207	223	239	255

LaserJet 5M MS publishing (6J)

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	0	16	32	48	2 64	80	‘ 96	112	128	144	160	° 176	192	208	Ω 224	240
1	1	17	1 33	49	65	81	97	113	129	145	′ 161	● 177	` 193	` 209	225	241
2	2	18	” 34	50	66	℞ 82	98	114	130	146	″ 162	● 178	´ 194	´ 210	226	242
3	3	19	3 35	51	67	Š 83	% 99	š 115	131	147	^ 163	● 179	^ 195	^ 211	227	243
4	4	20	4 36	52	68	™ 84	100	116	132	148	~ 164	○ 180	˜ 196	˜ 212	228	244
5	5	21	5 37	53	69	85	101	117	133	149	165	○ 181	¯ 197	¯ 213	229	ı 245
6	6	22	7 38	54	70	86	102	118	134	150	166	◯ 182	˘ 198	˘ 214	IJ 230	ij 246
7	7	23	’ 39	55	71	87	103	119	135	151	167	■ 183	˙ 199	˙ 215	L· 231	l· 247
8	8	24	9 40	56	72	88	104	120	136	152	168	■ 184	¨ 200	¨ 216	Ł 232	ł 248
9	9	25	0 41	57	73	Ÿ 89	105	121	137	153	fi 169	■ 185	201	217	233	249
A	10	26	8 42	58	74	Ž 90	106	ž 122	138	154	fl 170	□ 186	° 202	° 218	234	250
B	11	27	† 43	59	75	91	107	123	139	155	ff 171	□ 187	¸ 203	¸ 219	235	251
C	12	28	, 44	” 60	76	92	ℓ 108	124	140	156	ffi 172	□ 188	204	220	236	252
D	13	29	– 45	‡ 61	— 77	93	109	125	141	157	ffl 173	‰ 189	″ 205	″ 221	237	253
E	14	30	… 46	62	– 78	6 94	110	“ 126	142	Pt 158	‹ 174	◆ 190	¸ 206	¸ 222	238	254
F	15	31	/ 47	63	Œ 79	= 95	œ 111	127	143	f 159	› 175	◇ 191	ˇ 207	ˇ 223	’n 239	255

LaserJet 5M Windows (9U)

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	0	16	32	0 48	@ 64	P 80	` 96	p 112	128	144	160	° 176	À 192	Đ 208	à 224	ð 240
1	1	17	! 33	1 49	A 65	Q 81	a 97	q 113	129	‘ 145	¡ 161	± 177	Á 193	Ñ 209	á 225	ñ 241
2	2	18	" 34	2 50	B 66	R 82	b 98	r 114	130	’ 146	¢ 162	2 178	Â 194	Ò 210	â 226	ò 242
3	3	19	# 35	3 51	C 67	S 83	c 99	s 115	131	147	£ 163	3 179	Ã 195	Ó 211	ã 227	ó 243
4	4	20	$ 36	4 52	D 68	T 84	d 100	t 116	132	148	¤ 164	´ 180	Ä 196	Ô 212	ä 228	ô 244
5	5	21	% 37	5 53	E 69	U 85	e 101	u 117	133	149	¥ 165	µ 181	Å 197	Õ 213	å 229	õ 245
6	6	22	& 38	6 54	F 70	V 86	f 102	v 118	134	150	¦ 166	¶ 182	Æ 198	Ö 214	æ 230	ö 246
7	7	23	' 39	7 55	G 71	W 87	g 103	w 119	135	151	§ 167	· 183	Ç 199	× 215	ç 231	÷ 247
8	8	24	(40	8 56	H 72	X 88	h 104	x 120	136	152	¨ 168	¸ 184	È 200	Ø 216	è 232	ø 248
9	9	25	) 41	9 57	I 73	Y 89	i 105	y 121	137	153	© 169	1 185	É 201	Ù 217	é 233	ù 249
A	10	26	* 42	: 58	J 74	Z 90	j 106	z 122	138	154	a 170	o 186	Ê 202	Ú 218	ê 234	ú 250
B	11	27	+ 43	; 59	K 75	[91	k 107	{ 123	139	155	« 171	» 187	Ë 203	Û 219	ë 235	û 251
C	12	28	, 44	< 60	L 76	\ 92	l 108	| 124	140	156	¬ 172	¼ 188	Ì 204	Ü 220	ì 236	ü 252
D	13	29	- 45	= 61	M 77	] 93	m 109	} 125	141	157	- 173	½ 189	Í 205	Ý 221	í 237	ý 253
E	14	30	. 46	> 62	N 78	^ 94	n 110	~ 126	142	158	® 174	¾ 190	Î 206	Þ 222	î 238	þ 254
F	15	31	/ 47	? 63	O 79	_ 95	o 111	127	143	159	¯ 175	¿ 191	Ï 207	ß 223	ï 239	ÿ 255

LaserJet 5M Desktop (7J)

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	0	16	32	0 48	@ 64	P 80	‘ 96	p 112	128	144	160	“ 176	– 192	‹ 208	a 224	´ 240
1	1	17	! 33	1 49	A 65	Q 81	a 97	q 113	129	145	¶ 161	” 177	± 193	› 209	o 225	` 241
2	2	18	" 34	2 50	B 66	R 82	b 98	r 114	130	146	§ 162	µ 178	× 194	« 210	æ 226	^ 242
3	3	19	# 35	3 51	C 67	S 83	c 99	s 115	131	147	† 163	‰ 179	÷ 195	» 211	Æ 227	¨ 243
4	4	20	$ 36	4 52	D 68	T 84	d 100	t 116	132	148	‡ 164	• 180	° 196	, 212	ð 228	˜ 244
5	5	21	% 37	5 53	E 69	U 85	e 101	u 117	133	149	© 165	● 181	' 197	„ 213	Đ 229	ˇ 245
6	6	22	& 38	6 54	F 70	V 86	f 102	v 118	134	150	® 166	○ 182	" 198	· 214	ij 230	˘ 246
7	7	23	’ 39	7 55	G 71	W 87	g 103	w 119	135	151	™ 167	○ 183	¼ 199	¡ 215	IJ 231	″ 247
8	8	24	(40	8 56	H 72	X 88	h 104	x 120	136	152	% 168	■ 184	½ 200	¿ 216	ł 232	° 248
9	9	25	) 41	9 57	I 73	Y 89	i 105	y 121	137	153	¢ 169	■ 185	¾ 201	Pt 217	Ł 233	· 249
A	10	26	* 42	: 58	J 74	Z 90	j 106	z 122	138	154	– 170	□ 186	1 202	ℓ 218	œ 234	¯ 250
B	11	27	+ 43	; 59	K 75	[91	k 107	{ 123	139	155	— 171	□ 187	2 203	£ 219	Œ 235	¸ 251
C	12	28	, 44	< 60	L 76	\ 92	l 108	| 124	140	156	… 172	' 188	3 204	¥ 220	ø 236	¸ 252
D	13	29	- 45	= 61	M 77	] 93	m 109	} 125	141	157	fi 173	¬ 189	/ 205	¤ 221	Ø 237	· 253
E	14	30	. 46	> 62	N 78	^ 94	n 110	~ 126	142	158	fl 174	¦ 190	206	f 222	þ 238	ı 254
F	15	31	/ 47	? 63	O 79	_ 95	o 111	127	143	159	175	= 191	207	ß 223	Þ 239	255

LaserJet 5M ISO Latin 2 (2N)

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	0	16	32	0	@	P	`	p	128	144	160	°	Ŕ	Đ	ŕ	đ
1	1	17	!	1	A	Q	a	q	129	145	Ą	ą	Á	Ń	á	ń
2	2	18	"	2	B	R	b	r	130	146	˘	¸	Â	Ň	â	ň
3	3	19	#	3	C	S	c	s	131	147	Ł	ł	Ă	Ó	ă	ó
4	4	20	$	4	D	T	d	t	132	148	¤	´	Ä	Ô	ä	ô
5	5	21	%	5	E	U	e	u	133	149	Ľ	ľ	Ĺ	Ő	Í	ő
6	6	22	&	6	F	V	f	v	134	150	Ś	ś	Ć	Ö	ć	ö
7	7	23	'	7	G	W	g	w	135	151	§	ˇ	Ç	×	ç	÷
8	8	24	(	8	H	X	h	x	136	152	¨	¸	Č	Ř	č	ř
9	9	25	)	9	I	Y	i	y	137	153	Š	š	É	Ů	é	ů
A	10	26	*	:	J	Z	j	z	138	154	Ş	ş	Ę	Ú	ę	ú
B	11	27	+	;	K	[	k	{	139	155	Ť	ť	Ë	Ű	ë	ű
C	12	28	,	<	L	\	l	|	140	156	Ź	ź	Ě	Ü	ě	ü
D	13	29	-	=	M	]	m	}	141	157	-	˝	Í	Ý	í	ý
E	14	30	.	>	N	^	n	~	142	158	Ž	ž	Î	Ţ	î	ţ
F	15	31	/	?	O	_	o		143	159	Ż	ż	Ď	ß	đ'	·
			47	63	79	95	111	127			175	191	207	223	239	255

LaserJet 5M ISO Latin 5 (5N)

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3	3	19	#	3	C	S	c	s	131	147	£	3	Ã	Ó	ã	ó
4	4	20	$	4	D	T	d	t	132	148	¤	´	Ä	Ô	ä	ô
5	5	21	%	5	E	U	e	u	133	149	¥	µ	Å	Õ	å	õ
6	6	22	&	6	F	V	f	v	134	150	¦	¶	Æ	Ö	æ	ö
7	7	23	'	7	G	W	g	w	135	151	§	·	Ç	×	ç	÷
8	8	24	(	8	H	X	h	x	136	152	¨	¸	È	Ø	è	ø
9	9	25	)	9	I	Y	i	y	137	153	©	1	É	Ù	é	ù
A	10	26	*	:	J	Z	j	z	138	154	a	o	Ê	Ú	ê	ú
B	11	27	+	;	K	[	k	{	139	155	«	»	Ë	Û	ë	û
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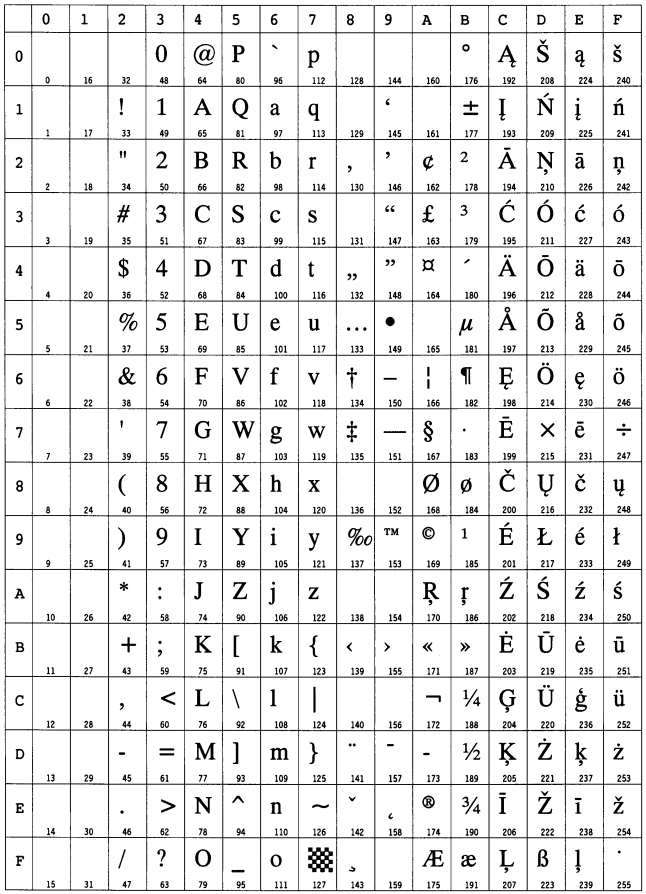
F	15	31	/	?	O	_	o		143	159	¯	¿	Ï	ß	ï	ÿ
			47	63	79	95	111	127			175	191	207	223	239	255

LaserJet 5M WinBalt (19L)



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			35	51	67	83	99	115	131	147	163	179	195	211	227	243
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			36	52	68	84	100	116	132	148	164	180	196	212	228	244
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			37	53	69	85	101	117	133	149	165	181	197	213	229	245
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			38	54	70	86	102	118	134	150	166	182	198	214	230	246
7	7	23	'	7	G	W	g	w	‡	—	§	·	Ē	×	ē	÷
			39	55	71	87	103	119	135	151	167	183	199	215	231	247
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			40	56	72	88	104	120	136	152	168	184	200	216	232	248
9	9	25	)	9	I	Y	i	y	‰	™	©	1	É	Ł	é	ł
			41	57	73	89	105	121	137	153	169	185	201	217	233	249
A	10	26	*	:	J	Z	j	z			Ŗ	ŗ	Ź	Ś	ź	ś
			42	58	74	90	106	122	138	154	170	186	202	218	234	250
B	11	27	+	;	K	[	k	{	‹	›	«	»	Ė	Ū	ė	ū
			43	59	75	91	107	123	139	155	171	187	203	219	235	251
C	12	28	,	<	L	\	l	|			¬	¼	Ģ	Ü	ģ	ü
			44	60	76	92	108	124	140	156	172	188	204	220	236	252
D	13	29	-	=	M	]	m	}	¨	¯	-	½	Ķ	Ż	ķ	ż
			45	61	77	93	109	125	141	157	173	189	205	221	237	253
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			46	62	78	94	110	126	142	158	174	190	206	222	238	254
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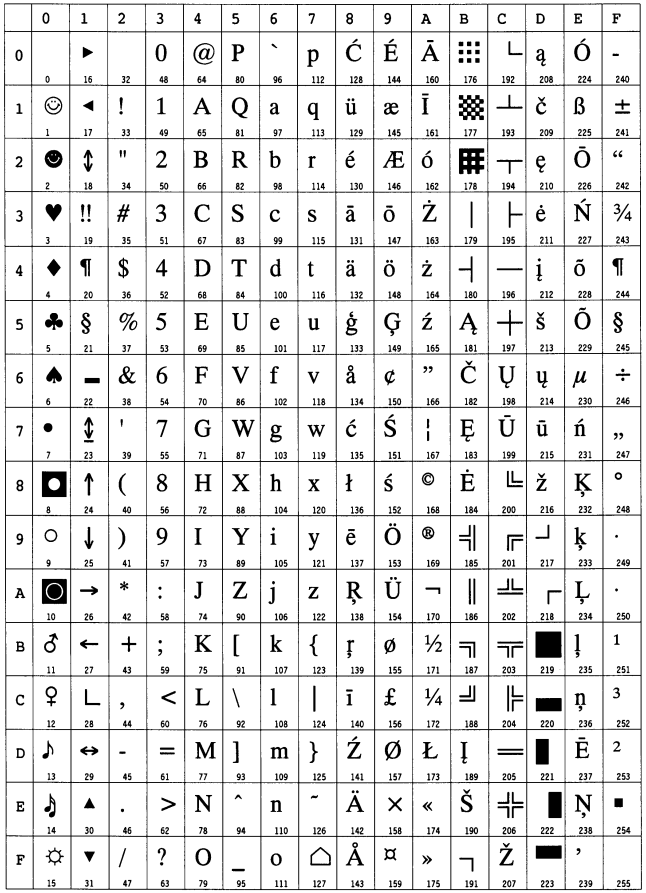
			47	63	79	95	111	127	143	159	175	191	207	223	239	255

LaserJet 5M PC775 (26U)



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	1	17	33	49	65	81	97	113	129	145	161	177	193	209	225	241
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	2	18	34	50	66	82	98	114	130	146	162	178	194	210	226	242
3	♥	‼	#	3	C	S	c	s	ā	ō	Ż	|	├	ė	Ń	¾
	3	19	35	51	67	83	99	115	131	147	163	179	195	211	227	243
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	4	20	36	52	68	84	100	116	132	148	164	180	196	212	228	244
5	♣	§	%	5	E	U	e	u	ģ	Ģ	ź	Ą	┼	š	Ō	§
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6	♠	▬	&	6	F	V	f	v	å	¢	”	Č	Ų	ų	µ	÷
	6	22	38	54	70	86	102	118	134	150	166	182	198	214	230	246
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8	◘	↑	(	8	H	X	h	x	ł	ś	©	Ė	╚	ž	Ķ	°
	8	24	40	56	72	88	104	120	136	152	168	184	200	216	232	248
9	○	↓	)	9	I	Y	i	y	ē	Ö	®	╣	╔	┘	ķ	·
	9	25	41	57	73	89	105	121	137	153	169	185	201	217	233	249
A	◙	→	*	:	J	Z	j	z	Ŗ	Ü	¬	‖	╩	┌	Ļ	·
	10	26	42	58	74	90	106	122	138	154	170	186	202	218	234	250
B	♂	←	+	;	K	[	k	{	ŗ	ø	½	╗	╦	■	ļ	1
	11	27	43	59	75	91	107	123	139	155	171	187	203	219	235	251
C	♀	└	,	<	L	\	l	|	ī	£	¼	╝	╠	▄	ņ	3
	12	28	44	60	76	92	108	124	140	156	172	188	204	220	236	252
D	♪	↔	-	=	M	]	m	}	Ź	Ø	Ł	Į	═	▌	Ē	2
	13	29	45	61	77	93	109	125	141	157	173	189	205	221	237	253
E	♫	▲	.	>	N	ˆ	n	˜	Ä	×	«	Š	╬	▐	Ņ	■
	14	30	46	62	78	94	110	126	142	158	174	190	206	222	238	254
F	☼	▼	/	?	O	_	o	⌂	Å	¤	»	¬	Ž	▬	’	
	15	31	47	63	79	95	111	127	143	159	175	191	207	223	239	255

LaserJet 5M PC-1004 (9J)

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	0	16	32	0 48	@ 64	P 80	` 96	p 112	128	144	160	° 176	À 192	Đ 208	à 224	ð 240
1	1	17	! 33	1 49	A 65	Q 81	a 97	q 113	129	‘ 145	¡ 161	± 177	Á 193	Ñ 209	á 225	ñ 241
2	2	18	" 34	2 50	B 66	R 82	b 98	r 114	, 130	’ 146	¢ 162	2 178	Â 194	Ò 210	â 226	ò 242
3	3	19	# 35	3 51	C 67	S 83	c 99	s 115	131	“ 147	£ 163	3 179	Ã 195	Ó 211	ã 227	ó 243
4	¯ 4	20	$ 36	4 52	D 68	T 84	d 100	t 116	„ 132	” 148	¤ 164	´ 180	Ä 196	Ô 212	ä 228	ô 244
5	˘ 5	21	% 37	5 53	E 69	U 85	e 101	u 117	… 133	• 149	¥ 165	µ 181	Å 197	Õ 213	å 229	õ 245
6	˙ 6	22	& 38	6 54	F 70	V 86	f 102	v 118	† 134	– 150	¦ 166	¶ 182	Æ 198	Ö 214	æ 230	ö 246
7	7	23	' 39	7 55	G 71	W 87	g 103	w 119	‡ 135	— 151	§ 167	· 183	Ç 199	× 215	ç 231	÷ 247
8	° 8	24	(40	8 56	H 72	X 88	h 104	x 120	ˆ 136	˜ 152	¨ 168	¸ 184	È 200	Ø 216	è 232	ø 248
9	9	25	) 41	9 57	I 73	Y 89	i 105	y 121	‰ 137	™ 153	© 169	1 185	É 201	Ù 217	é 233	ù 249
A	″ 10	26	* 42	: 58	J 74	Z 90	j 106	z 122	Š 138	š 154	a 170	o 186	Ê 202	Ú 218	ê 234	ú 250
B	˛ 11	27	+ 43	; 59	K 75	[91	k 107	{ 123	‹ 139	› 155	« 171	» 187	Ë 203	Û 219	ë 235	û 251
C	ˇ 12	28	, 44	< 60	L 76	\ 92	l 108	| 124	Œ 140	œ 156	¬ 172	¼ 188	Ì 204	Ü 220	ì 236	ü 252
D	13	29	- 45	= 61	M 77	] 93	m 109	} 125	141	157	- 173	½ 189	Í 205	Ý 221	í 237	ý 253
E	14	30	. 46	> 62	N 78	^ 94	n 110	~ 126	142	158	® 174	¾ 190	Î 206	Þ 222	î 238	þ 254
F	15	31	/ 47	? 63	O 79	_ 95	o 111	⌂ 127	143	Ÿ 159	¯ 175	¿ 191	Ï 207	ß 223	ï 239	ÿ 255

LaserJet 5M Windows Latin 1 (19U)

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	0	16	32	0 48	@ 64	P 80	` 96	p 112	128	144	160	° 176	À 192	Đ 208	à 224	ð 240
1	1	17	! 33	1 49	A 65	Q 81	a 97	q 113	129	‘ 145	¡ 161	± 177	Á 193	Ñ 209	á 225	ñ 241
2	2	18	" 34	2 50	B 66	R 82	b 98	r 114	, 130	’ 146	¢ 162	2 178	Â 194	Ò 210	â 226	ò 242
3	3	19	# 35	3 51	C 67	S 83	c 99	s 115	*f* 131	“ 147	£ 163	3 179	Ã 195	Ó 211	ã 227	ó 243
4	4	20	$ 36	4 52	D 68	T 84	d 100	t 116	„ 132	” 148	¤ 164	´ 180	Ä 196	Ô 212	ä 228	ô 244
5	5	21	% 37	5 53	E 69	U 85	e 101	u 117	… 133	• 149	¥ 165	µ 181	Å 197	Õ 213	å 229	õ 245
6	6	22	& 38	6 54	F 70	V 86	f 102	v 118	† 134	– 150	¦ 166	¶ 182	Æ 198	Ö 214	æ 230	ö 246
7	7	23	' 39	7 55	G 71	W 87	g 103	w 119	‡ 135	— 151	§ 167	· 183	Ç 199	× 215	ç 231	÷ 247
8	8	24	(40	8 56	H 72	X 88	h 104	x 120	ˆ 136	˜ 152	¨ 168	¸ 184	È 200	Ø 216	è 232	ø 248
9	9	25	) 41	9 57	I 73	Y 89	i 105	y 121	‰ 137	™ 153	© 169	1 185	É 201	Ù 217	é 233	ù 249
A	10	26	* 42	: 58	J 74	Z 90	j 106	z 122	Š 138	š 154	a 170	o 186	Ê 202	Ú 218	ê 234	ú 250
B	11	27	+ 43	; 59	K 75	[91	k 107	{ 123	‹ 139	› 155	« 171	» 187	Ë 203	Û 219	ë 235	û 251
C	12	28	, 44	< 60	L 76	\ 92	l 108	| 124	Œ 140	œ 156	¬ 172	¼ 188	Ì 204	Ü 220	ì 236	ü 252
D	13	29	- 45	= 61	M 77	] 93	m 109	} 125	141	157	- 173	½ 189	Í 205	Ý 221	í 237	ý 253
E	14	30	. 46	> 62	N 78	^ 94	n 110	~ 126	142	158	® 174	¾ 190	Î 206	Þ 222	î 238	þ 254
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LaserJet 5M Windows Latin 2 (9E)

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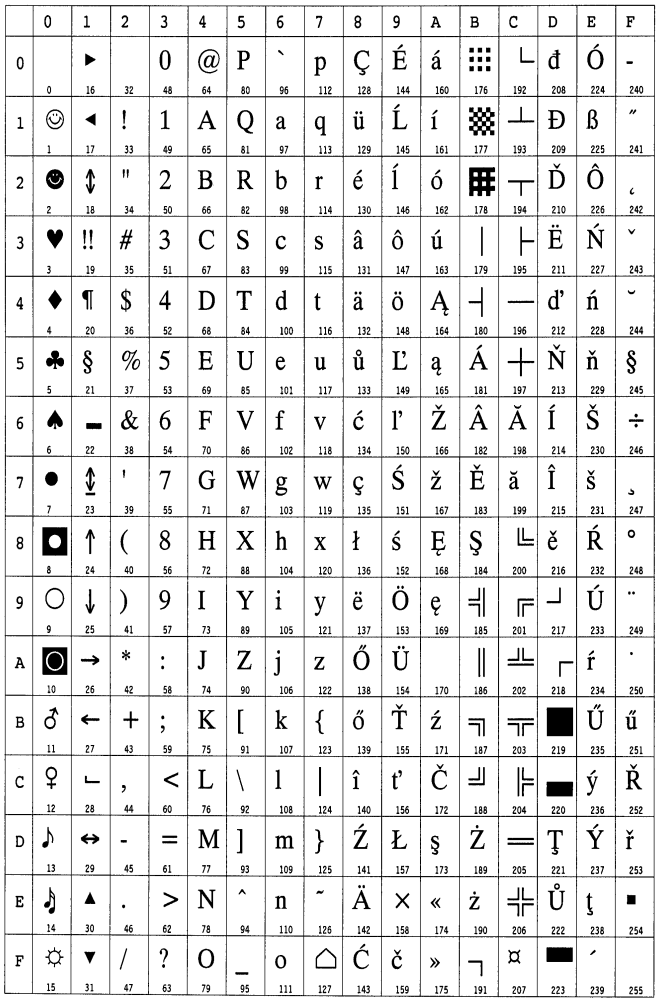
LaserJet 5M PC-852 Latin 2 (17U)



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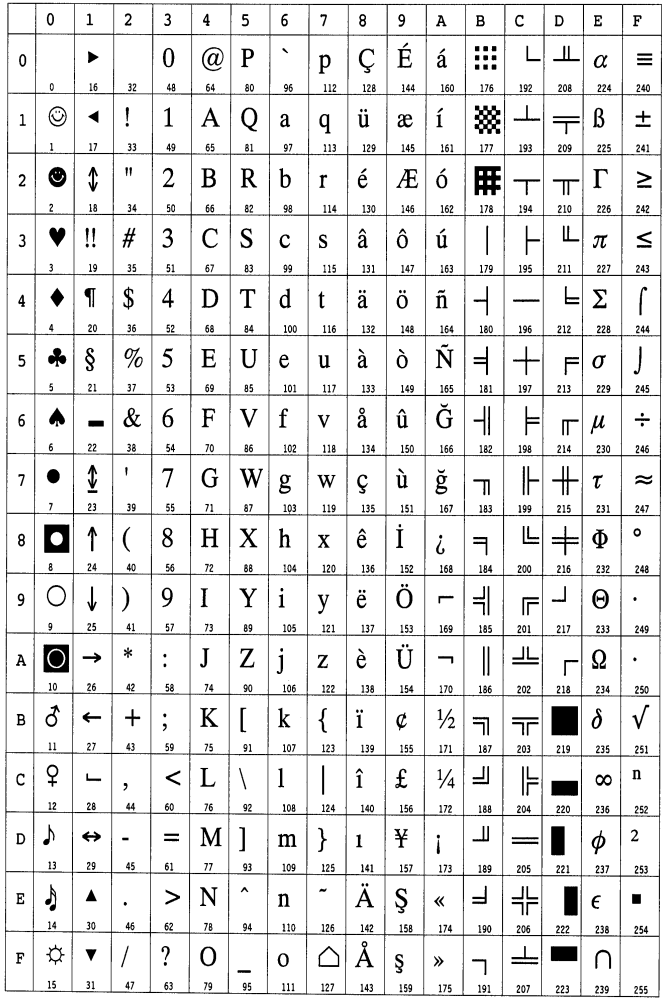
LaserJet 5M PC-Turkish (9T)



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LaserJet 5M International Characters

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0I ISO-15 Italian	£	$	§	°	ç	é	^	ù	à	ò	è	ì
0S ISO-11 Swedish names	#	¤	É	Ä	Ö	Å	Ü	é	ä	ö	å	ü
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Appendix A
Printer Specifications

Printer Specifications

Item	Description
Printing method	Electrophotography, Semiconductor laser + polygon mirror system
Printing speed (when printing multiple copies of the same page)	A4: 28 pages/minute (landscape feed) B4: 18 pages/minute A3: 16 pages/minute
Resolution	600 dots/inch (vertical and horizontal), includes KIR smoothing function (2400 dots/inch horizontal)
First print (A4, 20°C)	Sleep mode off - Approx. 10 seconds Sleep mode on - Approx. 75 seconds
Warmup time (20°C)	65 seconds or less
Controller	PowerPC 603e™ (166 MHz)
Main memory	8 MB, expandable up to 72 MB, with two SIMM slots
Supported operating systems	Windows 3.1, Windows 95/98, Windows NT
Supported protocols	IPX/SPX, TCP/IP, DLC
Interfaces	High-speed bidirectional parallel interface × 1 Serial interface (RS-232C/RS-422A) × 1 Optional interface slot × 1 Optional interface/hard disk slot × 1
Memory card slot	Type I slot (JEIDA ver. 4.2/PCMCIA Ver. 2.1) × 1
Self test	Performed at power-up
Maximum duty cycle	100,000 pages/month (dry A4 PPC standard paper)
Drum	Amorphous silicon drum
Developer	Mono-component dry developer
Main charger	Positive scorotron charger
Transferring	Negative charger roller
Separation	Positive charger electrode
Drum cleaning	Blade cleaner
Drum discharging	Illumination by eraser LED array

Item	Description	
Fuser	Heat roller and pressure roller	
Toner saving	Ecoprint mode	
Paper	Plain paper (See Appendix B.)	
Paper sizes	Cassettes:	Ledger size, A3 to A5 universal cassette
	Multi-purpose tray:	80 mm x 148 mm to 297 mm x 450 mm
Paper capacity	Cassettes:	500 sheets each (80 g/m^2, [0.1-mm thickness])
	Multipurpose tray:	100 sheets (80 g/m^2, [0.1-mm thickness])
Capacity of output trays	Face-down tray—500 sheets (80 g/m^2, [0.1-mm thickness])	
	Face-up tray—500 sheets (80 g/m^2, [0.1-mm thickness])	
Ambient conditions	Temperature:	10°C to 32.5°C (50°F to 90.5°F)
	Humidity:	20% to 80% RH
	Optimum conditions:	20°C (68°F), 65% RH
	Altitude:	Max. 2000m (6500 feet)
Power supply	120 V, 60 Hz, max. 10 A (U.S.A./Canada)	
	220-240 V, 50/60 Hz, max. 5 A (European countries)	
	Max. allowable voltage fluctuation: ±10%	
	Max. allowable frequency fluctuation: ±2%	
Power consumption	Max.:	1200 W
	During normal operations:	710 W
	During standby:	200 W
	During sleep mode:	29 W
Operating noise (in accordance with ISO 7779 [Bystander Position, sound pressure level at the front])	During printing:	LpA = 50 dB (A)
	During standby:	LpA = 38 dB (A)
	During sleep mode:	Immeasurably low
External dimensions	Printer:	560 mm (22 1/8") wide × 345 mm (13 5/8") high × 566 mm (22 3/8") deep
	Paper feeder:	560 mm (22 1/8") wide × 247 mm (9 3/4") high × 560 mm (22 1/8") deep
Weight	Printer:	41.5 kg (91.5 lbs.)
	Paper feeder:	19.5 kg (43 lbs.)

Appendix B
Paper Selection

General Guidelines

Although the page printer is designed for printing on standard dry PPC photocopier copy paper (standard paper), it can print on various types of paper that conforms to the specifications given in this chapter.

Select paper carefully as use of paper inappropriate for the printer may result in paper jams or wrinkling of output paper. Low-quality paper may reduce printing quality, not only wasting paper but possibly leading to damage to the printer. It is possible to achieve efficient printing with few problems and minimize the risk of printer damage or wear by following the precautions listed below.

Usable Paper

Be sure to use copy paper (standard paper) used in standard dry PPC photocopiers.

Note

Some recycled paper does not meet the necessary specifications for use in this printer due to conditions such as stored water and pulp content. Before purchasing recycled paper, test a sample on the printer and check that printing quality is satisfactory. Be sure to select a brand of recycled paper which offers good printing quality and does not contain excessive levels of paper dust.

There are differences in grade between each paper manufacturer, and these differences can affect printer operations. Satisfactory printing results cannot be obtained through the use of poor-quality paper. Even inexpensive paper may turn out to be uneconomical from a results standpoint if its quality is inappropriate for the printer.

Paper Specifications

The following table summarizes the basic paper specifications. Details are given on the following pages.

Paper Specifications

Weight	60 to 90 g/m^2 (16 to 24 lbs./ream)
Thickness	0.086 to 0.110 mm (3.4 to 4.3 mils)
Dimensional accuracy	±0.7 mm (±0.0276 inches)
Squareness of corners	90° ±0.2°
Moisture content	4% to 6%
Pulp content	80% or more

Note

Consult with your Kyocera dealer before purchasing any specially treated paper or special application paper.

Kyocera bears absolutely no responsibility for accidents resulting from the use of inappropriate paper which does not meet the specifications listed above. For paper, contact the licensed dealer of Kyocera from which you purchased the printer.

Selecting the Right Paper

The following sections explain the basic things to look for when selecting paper. Keep these things in mind when selecting paper.

Condition of the Paper

Avoid using paper that is folded at the corners, curled, dirty, stained, has a rough cut, fuzzy fibers, rough surface or is easily torn.

Use of paper in these conditions can lead to illegible printing, misfeeding, and paper jams, and can shorten the life of the printer. Select paper which has as smooth and even a surface as possible. Note that use of paper with a surface coating or other surface treatment may damage the drum or fuser unit.

Composition

Do not use paper that has been coated or surface-treated and contains plastic or carbon. The heat of fusing can cause such paper to give off harmful fumes, and may damage the drum.

Bond paper should contain at least 80% pulp. Not more than 20% of the total paper content should consist of cotton or other fibers.

Paper Size

Cassettes and the multi-purpose tray can handle the paper sizes listed in the following table. The printer automatically detects the paper size loaded in a cassette.

Paper Sizes for Paper Feeding

Paper	Size
ISO A3	297 × 420 mm
ISO A4	210 × 297 mm
ISO A5	148 × 210 mm
JIS B4	257 × 364 mm
JIS B5	182 × 257 mm
Ledger	11 × 17 inches
Letter	8.5 × 11 inches
Legal	8.5 × 14 inches

Other sizes of paper can be fed from multi-purpose tray. The minimum size of fed paper is 80 × 148 mm (3.1 × 5.8 inches). The maximum size is 297 × 450 mm (11.7 × 17.7 inches). (Printing position adjustment is required.)

Smoothness

Although it is important to use paper with a smooth and even surface, do not use paper which has been coated. Paper that is too smooth, can cause multiple feeding and paper jams.

Basis Weight

Basis weight is the weight of one square meter sheet of paper. Paper that is too light or too heavy can cause misfeeding, jams, and premature wear of the printer. Uneven paper weight can cause multiple feeds, print defects, poor toner fusing, blurring, and other print quality problems. The proper weight is 60 to 90 g/m^2 for regular paper and 90 to 200 g/m^2 for thick paper.

Thickness

The paper used with the printer should be neither extremely thick nor extremely thin. If you are having problems with multiple feeds and paper jams, the paper may be too thin. The paper may also be too thick if you are having problems with paper jams. The proper thickness is 0.086 to 0.110 mm (3.4 to 4.3 mils).

Moisture Content

Moisture content is defined as the percent ratio of moisture to the dry mass of the paper. Moisture can affect feedability, electrostatic properties, and toner fusing characteristics.

The moisture content of the paper varies with the relative humidity in the room. When the relative humidity is high and the paper absorbs moisture, the paper edges expand, becoming wavy in appearance. When the relative humidity is low and the paper loses moisture, the edges shrink and tighten, and print contrast may suffer.

Wavy or tight edges can cause misfeeding and alignment anomalies. The moisture content of the paper should be 4% to 6%.

To ensure the proper moisture content it is important to store the paper in a controlled environment. Some tips on moisture control are:

- **Store paper in a dry, well-ventilated location.**
- **Keep the paper flat and in its wrapping as long as possible. Rewrap paper that is not in use.**
- **Store paper in its original carton. Place a pallet etc. under the carton to separate it from the floor. Keep paper away from boarding or concrete floors during the rainy season.**
- **Avoid leaving paper where it is exposed to heat, sunlight, or damp.**

Other Paper Properties

Stiffness

Paper that is too limp or too stiff may fold or bend inside the printer, resulting in a paper jam.

Curl

Most paper has a natural tendency to curl in one direction or the other if it is stored unwrapped. Paper will curl slightly upward when it passes through the fuser unit. Load the paper with its natural curl downward so that it will come out flat. Some paper also has a front and back surface. If this is indicated on the paper's packaging, be sure to load the paper into the cassette face down.

Electrostatic properties

During the printing process the paper is electrostatically charged to attract the toner. The paper must be able to release this charge so that printed sheets do not cling together in the output tray.

Quality control

Uneven sheet size, corners that are not square, ragged edges, welded (uncut) sheets, and crushed edges and corners can cause the printer to malfunction in various ways. Pay particular attention to these considerations if you are choosing paper yourself.

Packaging

Select paper that is wrapped by the ream and then placed in a box. The best wrapping is one whose inner surface is coated to protect again humidity.

Specially treated paper

We recommend that you avoid using paper listed below which has been specially treated, even if it meets basic specifications. If you wish to use such paper, test a sample on the printer and check that printing quality is satisfactory before purchasing.

- Paper with a glossy finish
- Paper with sections cut out
- Paper which is embossed

Special Paper

This section explains printing on special paper. The page printer can use the following types of special paper. In this case, set the media type according to the table below.

Paper type	Media type
Colored paper	Color
Preprinted paper	Preprinted
Overhead projector transparencies	Transparency
Postcards	Cardstock
Envelopes	Envelope
Label	Labels

When using the above types of paper, be sure to use products that are specified for use with photocopiers and/or page printers. Feed paper other than colored paper or pre-printed paper from the MP (multi-purpose) tray or optional envelope feeder (EF-1) or universal feeder (UF-1).

Since the composition and quality of special paper vary considerably, special paper is more likely than white bond paper to give trouble during printing. Special paper may be used with this printer if it meets the following conditions. Note that these types of paper differ greatly in their construction and quality, resulting in an increased chance of problems occurring during printing. No liability will be assumed if moisture etc. given off in printing on special paper causes harm to the machine or operator.

Note

Before purchasing any type of special paper, test a sample on the printer and check that printing quality is satisfactory.

Specifications for each type of special paper are given below.

Colored Paper

Colored paper should meet the same specifications as listed for white bond paper in page B-3. In addition, the pigments used in the paper must be able to withstand the temperature of the printer's fusing process (approximately 200°C [392°F]).

Preprinted Paper

The paper base of preprinted paper should meet basic specifications. The preprinted ink must be able to withstand the temperature of the printer's fusing process (approximately 200°C [392°F]), and do not use paper with any kind of surface treatment, such as the type of paper commonly used for calendars.

Overhead Projection (OHP) Film

OHP film must be able to withstand the heat of fusing during the printing process. Specifications are as follows.

OHP Film Specifications

Item	Specification
Tolerance of heat	Must be able to withstand the temperature of the printer's fusing process (approximately 200°C [392°F]).
Thickness	0.100 to 0.110 mm (3.9 to 4.3 mils)
Material	Polyester
Squareness of corners	90° ±0.2°

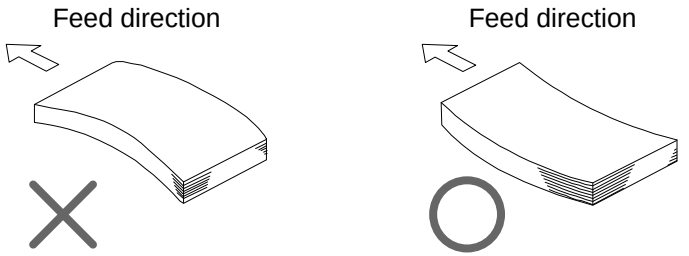
Note

Do not use film made from anything other than polyester.

Thick Paper/Postcards

Use postcards weighing 90 to 200 g/m^2. Any postcards of size 100 mm by 148 mm or larger may be used. Avoid using homemade postcards, picture postcards or postcards whose printing surface has been coated. Do not use paper which has a rough cut.

When using paper which is slightly curled or paper which is printed on one side be sure to slightly curl the paper upward as shown in the figure.



Envelopes

Envelopes made from paper weighing 60 to 79 g/m^2 may be printed using this printer.

Envelopes are not of even thickness due to their folded construction. It therefore may not be possible to print evenly on an envelope surface in some cases. Envelopes which are particularly thick may wrinkle as they come out of the printer. Test a sample envelope on the printer and check that printing quality is satisfactory before purchasing.

Envelopes with exposed adhesive cannot be used regardless of their type. Envelopes which use peel-off strips to cover adhesive also cannot be used as this little strip coming off inside the printer can result in major damage.

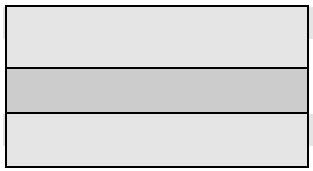
Envelopes which have been specially treated also cannot be used. For example, envelopes with string attached for sealing , envelopes with open windows, and envelopes with film covered windows cannot be used with this printer.

Label

The basic rule for printing on adhesive label is that the adhesive must never come into contact with any part of the printer. Adhesive paper sticking to the drum or rollers will damage the printer.

Label paper must be manually fed.

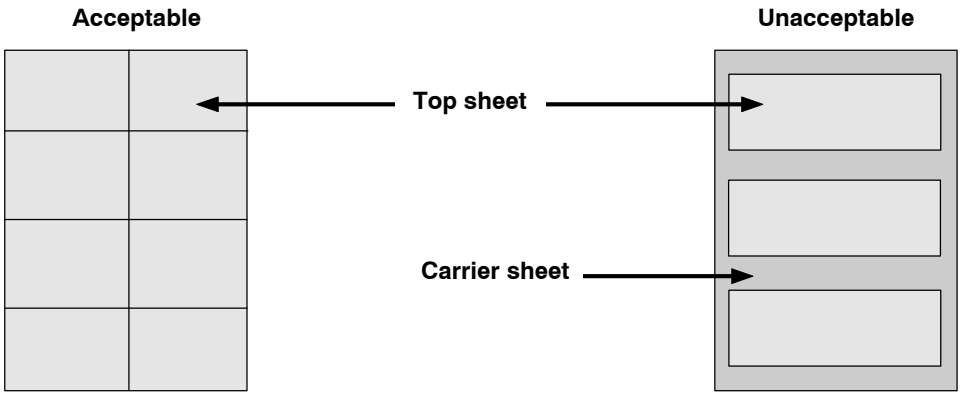
Label paper has a structure comprising three layers, as shown below. The top sheet is printed on. The adhesive layer consists of pressure-sensitive adhesives. The carrier sheet (also called the linear or backing sheet) holds the label until use. Due to the complexity of its composition, adhesive-backed label paper is particularly likely to give trouble in printing.



Adhesive-back label

Adhesive label paper must be entirely covered by its top sheet, with no spaces between the individual labels. Labels with spaces in between are apt to peel off, causing serious jam problems.

Some label paper is manufactured with an extra margin of top sheet around the edge. Do not remove the extra top sheet from the carrier sheet until after printing is finished.



Label arrangement

Table below lists the specifications for adhesive label paper.

Adhesive Label Specifications

Item	Specification
Weight of top sheet	44 to 74 g/m^2 (12 to 20 lbs/ream)
Composite weight	104 to 151 g/m^2 (28 to 40 lbs/ream)
Thickness of top sheet	0.086 to 0.107 mm (3.9 to 4.2 mils)
Composite thickness	0.115 to 0.145 mm (4.5 to 5.7 mils)
Moisture content	4% to 6% (composite)

Note

Printing quality and possible trouble when printing labels are entirely the responsibility of the user.

Appendix C Host Computer Interface

This appendix describes the signals used in the laser printer's parallel, RS-232C/RS-422A interfaces. It also lists pin assignments, signal functions, timings, connector specifications, and voltage levels. The RS-232C/RS-422A protocols are also covered. Finally, it explains the use of the printer in a multi-computer environment.

Parallel Interface

Parallel interface communication modes

The printer features the fast data transmission on the parallel interface. The parallel interface mode can be activated from the printer's control panel (see **Chapter 2**) as follows:

Note

Use a parallel printer cable that complies with the IEEE1284 standards.

Nibble (high) [default]

High speed data communication is used in compliance with the IEEE 1284 standard. Ordinarily, you should leave this setting unchanged.

Auto

The printer automatically changes its communication mode to the one the host computer is currently using.

Normal

The printer uses the communication method described by to the normal definitions of the Centronics interface.

High-speed

This mode enables faster data transmission between the printer and the host computer.

Interface Signals

The pins of the parallel interface connector carry the signals listed in Table C. 1. Asterisks in the table indicate signals that are active low. The table also indicates whether each signal is incoming or outgoing with respect to the printer.

Table C. 1. Parallel Connector Pin Assignments

Pin	In/out	Description
1	In	Strobe* [nStrobe]
2	In	Data 0 [Data 1]
3	In	Data 1 [Data 2]
4	In	Data 2 [Data 3]
5	In	Data 3 [Data 4]
6	In	Data 4 [Data 5]
7	In	Data 5 [Data 6]
8	In	Data 6 [Data 7]
9	In	Data 7 [Data 8]
10	Out	Acknowledge* [nAck]
11	Out	Busy [Busy]
12	Out	Paper Empty [PError]
13	Out	On-Line (Select) [Select]
14	In	Auto-feed [nAutoFd]
15	—	Not connected
16	—	0V DC
17	—	Chassis GND
18	—	+5 V DC
19	—	Ground return
20	—	Ground return
21	—	Ground return
22	—	Ground return
23	—	Ground return
24	—	Ground return
25	—	Ground return

(Continued on next page)

Pin	In/out	Description
26	—	Ground return
27	—	Ground return
28	—	Ground return
29	—	Ground return
30	—	Ground return
31	In	Ignored [nInit]
32	Out	Error*, returns error status if FRPO O2=2 [nFault]
33	—	—
34	—	Not connected
35	Out	Power Ready
36	In	Select In [NSelectIn]

[ ]: Signal names in the Auto mode (IEEE 1284). In the Auto mode, these signals are bi-directional.

Detailed descriptions of the signals follow.

Strobe* [nStrobe] (Pin 1)

A negative-going Strobe* pulse causes the printer to read and latch the data on the Data 0 [1] to Data 7 [8] signal lines.

Data 0 [1] to Data 7 [8] (Pins 2 to 9)

These eight signals form the data byte sent from the host computer to the printer. Data 7 [8] is the most significant bit.

Acknowledge* [nAck] (Pin 10)

This negative-going pulse acknowledges the previous character received by the printer. Acknowledge* pulses are sent only when Busy is low.

Busy [Busy] (Pin 11)

This signal is high when the printer is busy and low when it is able to accept more data. Every high-to-low transition is followed by an Acknowledge* pulse.

Paper Empty [PError] (Pin 12)

This signal goes high when the printer runs out of paper.

On-Line [Select] (Pin 13)

This signal is high when the printer is on-line and low when the printer is off-line. It goes low when the upper unit is raised, or when the **ON LINE** key is pressed to set the printer off-line.

Note

The Paper Empty and On-Line signals are not used unless enabled by the FRPO command (O2 parameter).

Auto-Feed [nAutoFd] (Pin 14)

This signal is used in the Epson version of the Centronics interface to receive a carriage return. In high-speed mode, it is used as an interrupt.

+5 V DC (Pin 18)

This line is connected to the printer's +5 V DC line (+5 V ±0.5 V, 250 mA [Serial and Parallel total] maximum, fused).

Prime [nInit] (Pin 31)

This signal is used in the standard Centronics interface to enable the computer to reset the printer. It is ignored by the printer.

Error* [nFault] (Pin 32)

When the high-speed parallel line control is on (FRPO O2=2), this line returns error status.

Auxiliary output 1 (Pin 33)

This signal line is not used.

Power Ready (Pin 35)

This signal is high when the printer's power is on.

Select In [NSelectIn] (Pin 36)

This signal is used in some versions of the Centronics interface to enable the computer to force the printer on-line. In high-speed mode, it is used as an interrupt.

Serial (RS-232C/RS-422A) Interface

RS-232C interface

Interface Signals

The pins of the printer's RS-232C interface connector carry the signals listed in Table C. 2. The table also indicates whether each signal is incoming or outgoing with respect to the printer.

Table C. 2. RS-232C Signal Pin Assignments

Pin	In/out	Signal	Description
1	—	FG	Frame ground
2	Out	TXD	Transmit Data
3	In	RXD	Receive Data
4	Out	RTS	Request To Send
5	In	CTS	Clear To Send
6	In	DSR	Data Set Ready
7	—	SG	Signal Ground
11	—	+5 V DC	Reserved
20	Out	DTR	Data Terminal Ready

Brief descriptions of the signals follow.

FG – Frame Ground – (Pin 1)

This pin is connected directly to the printer frame.

TXD – Transmit Data – (Pin 2)

This output carries asynchronous data sent by the printer to the computer. It is used mainly in handshaking protocols.

RXD – Receive Data – (Pin 3)

This input carries serial asynchronous data sent by the computer to the printer.

RTS – Request To Send – (Pin 4)

This output is always held high (above 3 volts).

CTS – Clear To Send – (Pin 5)
DSR – Data Set Ready – (Pin 6)

Unused.

SG – Signal Ground – (Pin 7)

All signals can transmit between the printer and the host computer to send each signals with a signal ground.

+5 V DC – (Pin 11)

This line is connected to the printer's +5 V DC line (+5 V ±0.5 V, 250 mA [Parallel and Serial total] maximum, fused).

DTR – Data Terminal Ready – (Pin 20)

This output is used as a buffer nearly-full handshake line. It is held high (above 3 volts) when the buffer can accept more data.

RS-232C Interface Voltage Levels

The voltage levels of the interface signals conform to EIA RS-232C specifications. SPACE is from 3 volts to 15 volts. MARK is from –3 volts to –15 volts. Voltages between –3 volts and 3 volts are undefined.

RS-422A interface

The serial interface of this printer was set to RS-232C mode before leaving the factory. However, by changing the jumper connector on the main circuit board, the interface can be changed to RS-422A mode.

In RS-232C mode, the printer can be connected to a personal computer (or similar device) equipped with an RS-232C serial interface. (The serial interface is set to RS-232C before leaving the factory.)

In RS-422A mode, the printer can be connected to a personal computer (or similar device) equipped with an RS-422A serial interface.

Note

The changing of the main circuit board jumper connector should be carried out only by a Kyocera authorized dealer or Kyocera certified technician. Kyocera shall not be liable for damage due to improper changing of this main circuit board jumper connector.

Note

The following instructions are intended for the technician only.

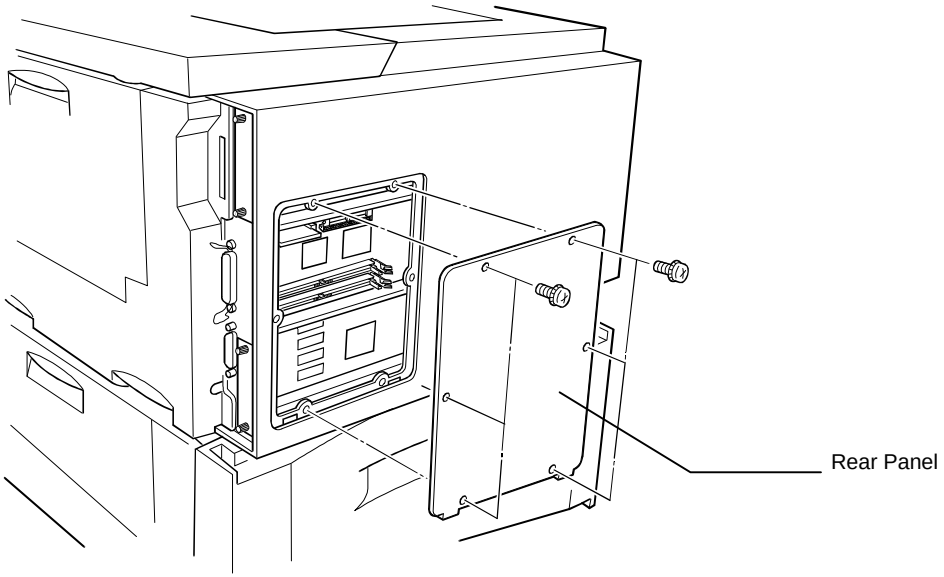
Note on Handling the Main Circuit Board

Before touching the main circuit board, touch a water pipe or other large metal object to discharge yourself of static electricity. While doing the work, it is recommended that you wear an antistatic wrist strap.

Removing the rear panel from the Printer

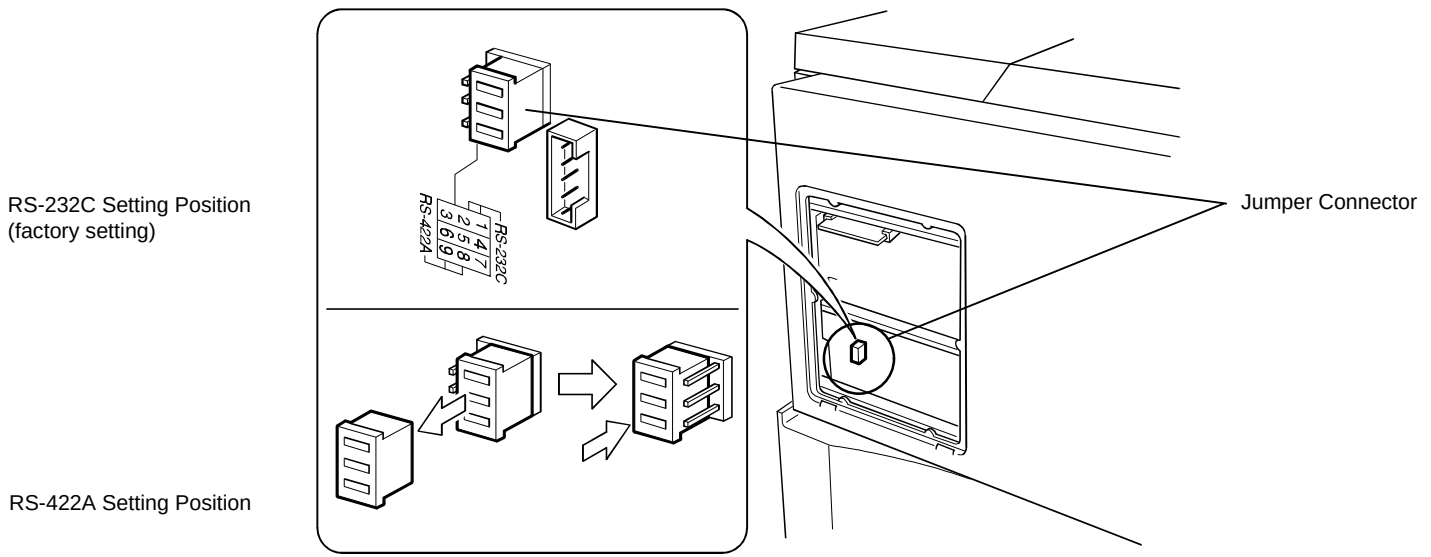
1. Turn the printer's power off. Unplug the printer's power cable and disconnect the printer's interface cable from the computer.

2. Remove the six screws from the printer's rear panel and remove the panel.



Changing the Jumper Setting

1. There is a jumper located on the main board in the location shown in the diagram. Referring to the diagram, set this jumper in the position which matches the serial interface mode to be used. In this example, the jumper setting is changed from RS-232C to RS-422A.



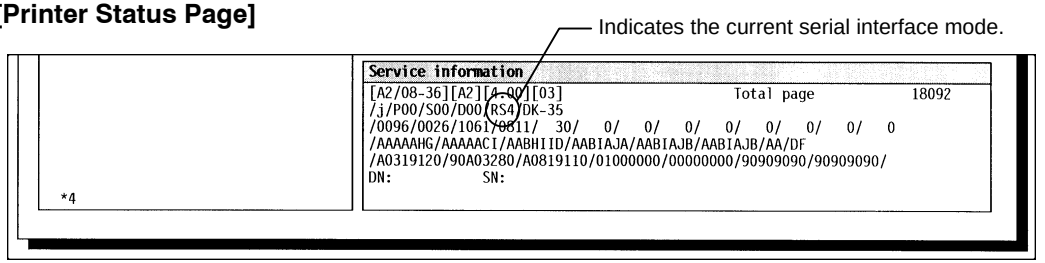
2. After completion of the above, replace the rear panel and secure it with the screws.

Verifying the Setting

The procedure described below should be followed to verify that the RS-422A mode had been correctly set. Print the service status page to verify that the RS-422A mode has been correctly set.

1. Make sure the power switch is off. Plug the power cord into the printer and turn power on.
2. If the printer is on-line, select >>Print Status page in the Mode Select menu (refer to Mode Select Menu at the end of this document), and print the service status page.
3. Verify whether the setting is corrected by checking the status printed at the bottom of the page. The following sample indicates that “RS-422A” is set “RS4”. If “RS-232C” is set, “RS2” appears.

[Printer Status Page]



Interface Signals

The pins in the printer’s RS-422A interface connector carry the signals listed in Table C. 3 .

Table C. 3. RS-422A Signal Pin Assignments

Pin	In/out	Signal	Description
1	—	FG	Frame ground
3	In	RDA	Receive data Inverted
7	—	SG	Signal ground
9	Out	SDA	Send data Inverted
10	Out	SDB	Send data
11	—	—	+5 V DC
18	In	RDB	Receive data

Overview of Signals (RS-422A)

FG – Frame Ground – (Pin 1)

This pin is connected directly to the printer frame.

RDA – Receive Data Inverted – (Pin 3)
RDB – Receive Data – (Pin 18)

These pins carry asynchronous data sent from the computer to the printer. (differential input)

SG – Signal Ground – (Pin 7)

All signals can transmit between the printer and the host computer to send each signals with a signal ground.

SDA – Send Data Inverted – (Pin 9)
SDB – Send Data – (Pin 10)

These pins carry asynchronous data sent from the printer to the computer. (differential output)

+5 V DC (Pin 11)

This line is connected to the printer's +5 V DC line (+5 V ±0.5 V, 250 mA [Serial and Parallel total] maximum, fused).

RS-422A interface voltage levels

The interface signal voltage levels conform with the EIA RS-422A standard. The differential voltage varies from 200 mV to 6 V.

SERIAL Connector

The connector marked **"IOIOI** " (RS-232C/RS-422A) on the rear panel is a DB-25S connector. Use a DB-25P connector (or equivalent) for the connector on the cable.

RS-232C/RS-422A Protocol

A protocol is a set of rules the computer follows in sending data to the printer. The RS-232C/RS-422A parameters are stored in battery backed-up memory. They are indicated on the status printout. They can be changed by the FRPO (firmware reprogram) command described in the *Programming Manual*. The parameters and their identification codes are given below.

H1: Baud rate

Parameter value	Baud rate
12	1200
24	2400
48	4800
96	9600
19	19200
38	38400
57	57600
11	115200

The factory setting is 9600 baud.

H2: Data bits

7 or 8, factory-set to 8.

H3: Stop bits

1 or 2, factory-set to 1.

H4: Parity

Parameter value	Meaning
0	None
1	Odd
2	Even
3	Ignore

The factory setting is “None” (0 on the status printout).

H5: Protocol logic

Parameter value	Meaning
0	Combination of 1 and 3 below
1	DTR/DSR, positive logic
2	DTR/DSR, negative logic
3	XON/XOFF
4	ETX/ACK
5	XON/XOFF recognized only as protocol

The factory setting is 0.

Note

Since DTR/DSR protocol is not used with the RS-422A standard, select a parameter value other than 0, 1, or 2 for the H5 setting when using the RS-422A interface.

H6: Buffer nearly-full threshold

This is a percentage from 0 to 99. The factory setting is 90.

H7: Buffer nearly-empty threshold

This is a percentage from 0 to 99. The factory setting is 70.

The factory settings of the buffer nearly-full and nearly-empty thresholds (H6 and H7) are subject to change without notification.

The gap between the nearly-full and nearly-empty thresholds allows the computer to send a fairly large amount of data in a continuous stream.

H8: Received-data buffer size

This is the size of the input buffer, specified in units of 10K bytes. The factory-set value is 6 meaning 60K bytes.

PRESCRIBE 2e FRPO D0 command

The PRESCRIBE 2e FRPO D0 command is provided to allow manipulating XON/XOFF when an error has occurred on the serial interface. The following table summarizes the error status corresponding to different D0 values.

		Serial interface error	
		error not handled	**error handled**
Timing of XON transfer to host while Ready or Waiting	XON sent every 3-5 seconds	D0 = 0 (default)	D0 = 1
	XON not sent	D0 = 10	D0 = 11

RS-232C Cable Connection

Preparing an RS-232C Cable

After obtaining an RS-232C cable, check that it is wired correctly, referring to the pin assignment table in *Appendix C*. If you have an IBM communication adapter cable type 1502067, you will have to resolder the wiring at the printer end of the cable. The procedure is as follows.

1. Unscrew the plastic cover from the printer end of the cable.

2. Next to each of the wires inside the cable is a bare shield wire. Solder all these shield wires together into a single bundle.

3. Using a section of flat wire about 3 mm wide and 15 mm long, connect the bundle of shield wires to the metal facing of the connector. Check that the solder connections are secure.

4. Desolder wires 2 and 3, then resolder them in crossed configuration. Solder wire 2 to pin 3 and wire 3 to pin 2. Cover the solder joints with thermofit tube.

5. Cut wires 4, 5, 6, and 20.

6. Solder wires 5 and 6 together and connect them to pin 20. Cover the solder joints with thermofit tube. Leave wire 4 unconnected.

7. Tape all remaining loose ends, or seal them with thermofit tube.

8. Screw the plastic cover back on.

Connecting the Printer to the Computer

1. Check that the power of both the printer and computer is switched off.

2. Discharge yourself by touching a metal object such as a doorknob.

3. Remove the plastic cap from the printer's RS-232C interface connector.

4. Plug the printer end of the RS-232C interface cable into the printer's RS-232C connector and screw it in place.

5. Plug the other end of the cable into the computer's RS-232C interface connector.

6. Switch on the printer's power.

7. The printer's RS-232C parameters are factory-set to the following values:

   Baud rate=9600 bps, Data bits (character length)=8 bits,
   Stop bits=1, Parity=None

   The three RS-232C protocols are XON/XOFF and DTR. The printer performs all three of them simultaneously, using positive logic for DTR.

   If you are uncertain as to the printer's current parameter settings, you can reset them to the values listed above by following the manner described in the last page in this manual.

8. Set the computer to the same parameters as the printer. On many computers this can be done by setting DIP switches before power is turned on. Another method is as follows:

In DOS, enter the following commands:

```
C>MODE COM1:96,N,8,1,P
C>MODE LPT1:=COM1
```

To test the interface, then enter:

```
CTRL P
C>DIR
CTRL P
```

The software settings made by the procedures above are temporary. On most computers, permanent settings must be made with DIP switches.

If you want to use a different baud rate or change any of the other RS-232C parameters, you can use the printer's FRPO (firmware reprogram) command. See the *Programming Manual* for details.

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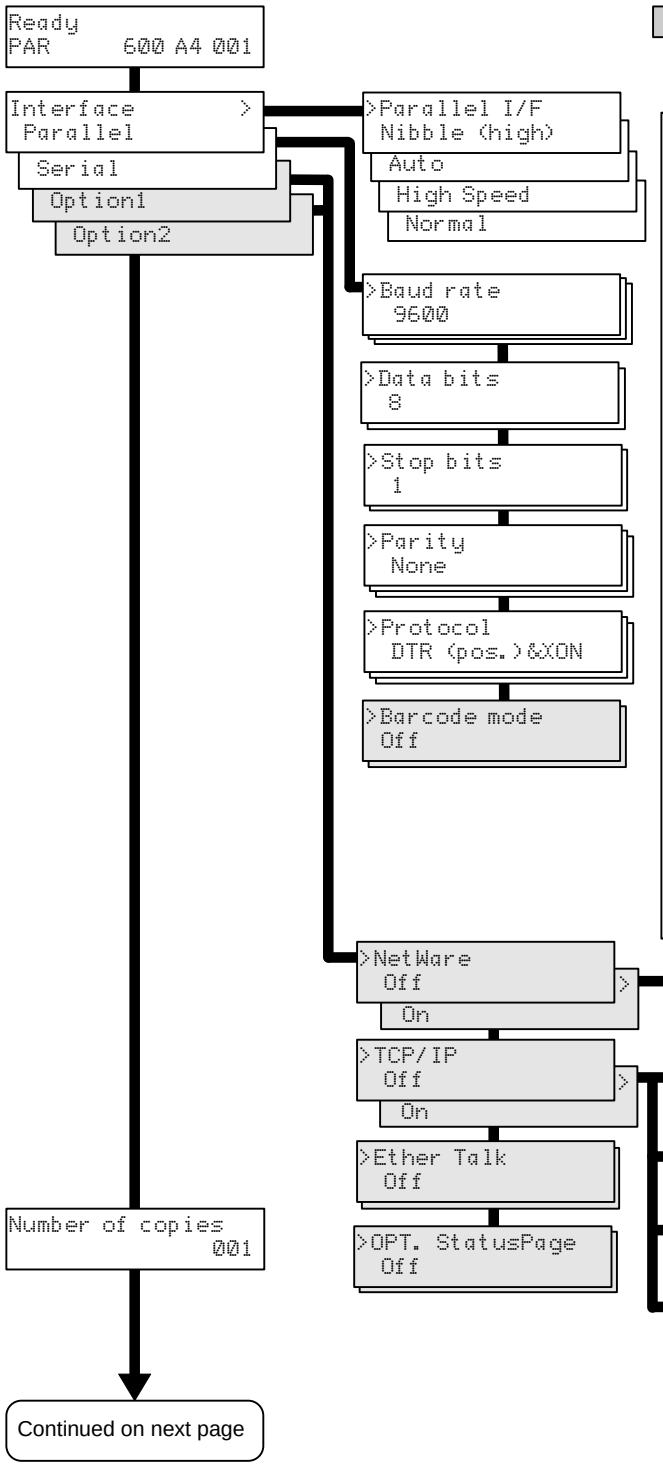
Mode Select Menu



These items willl not show unless the printer is installed with the applicable option unit/kit.

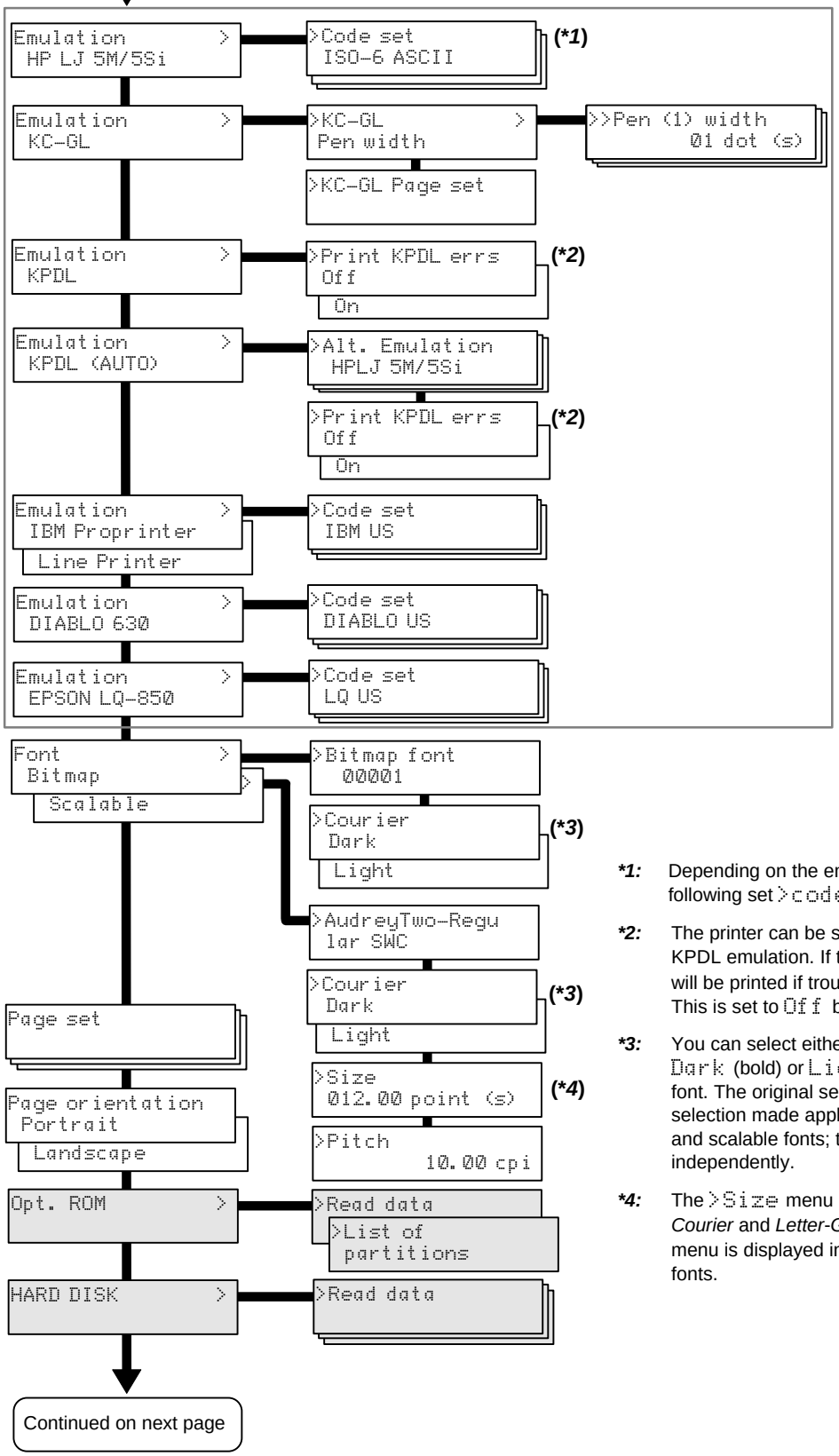
Basic Operations During Mode Selection

This diagram gives quick reference to all menu options and their sequence of selection. Use this description in combination with **Chapter 2 Mode Selection Menu**.

1. Press the **MODE** key to enter Mode Selction mode.
2. Press the **+** or **–** key repeatedly until the message display indicates the desired item.
3. Press the ▸ key to move to a submenu. Press the ◂ key to return.
4. Press the **ENTER** key once the desired menu appears. ? will flash, and the current setting can be changed.
5. Press the **+** and **–** key to select the desired setting.
6. Press the **ENTER** key.

   If you want to re-enter a setting, press the **CANCEL** key before pressing the **ENTER** key.
7. Press the **EXIT** key. This will enable currently selected settings.

(Continued from previous page)



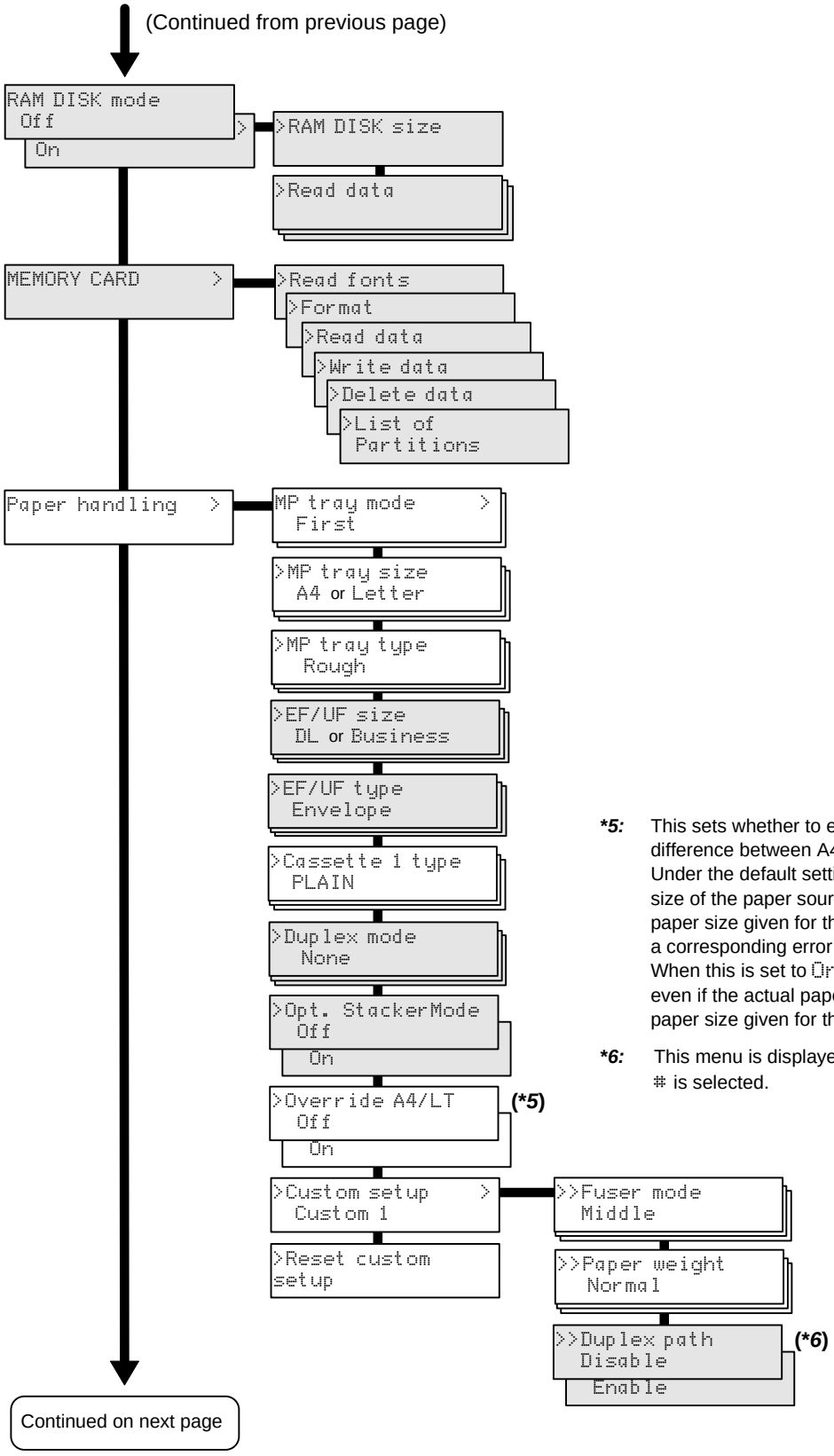
Continued on next page

1: Depending on the emulation selected, the following set `>code sets` are available.

2: The printer can be set to print error data during KPDL emulation. If this is set to `On`, error data will be printed if trouble occurs during printing. This is set to `Off` before leaving the factory.

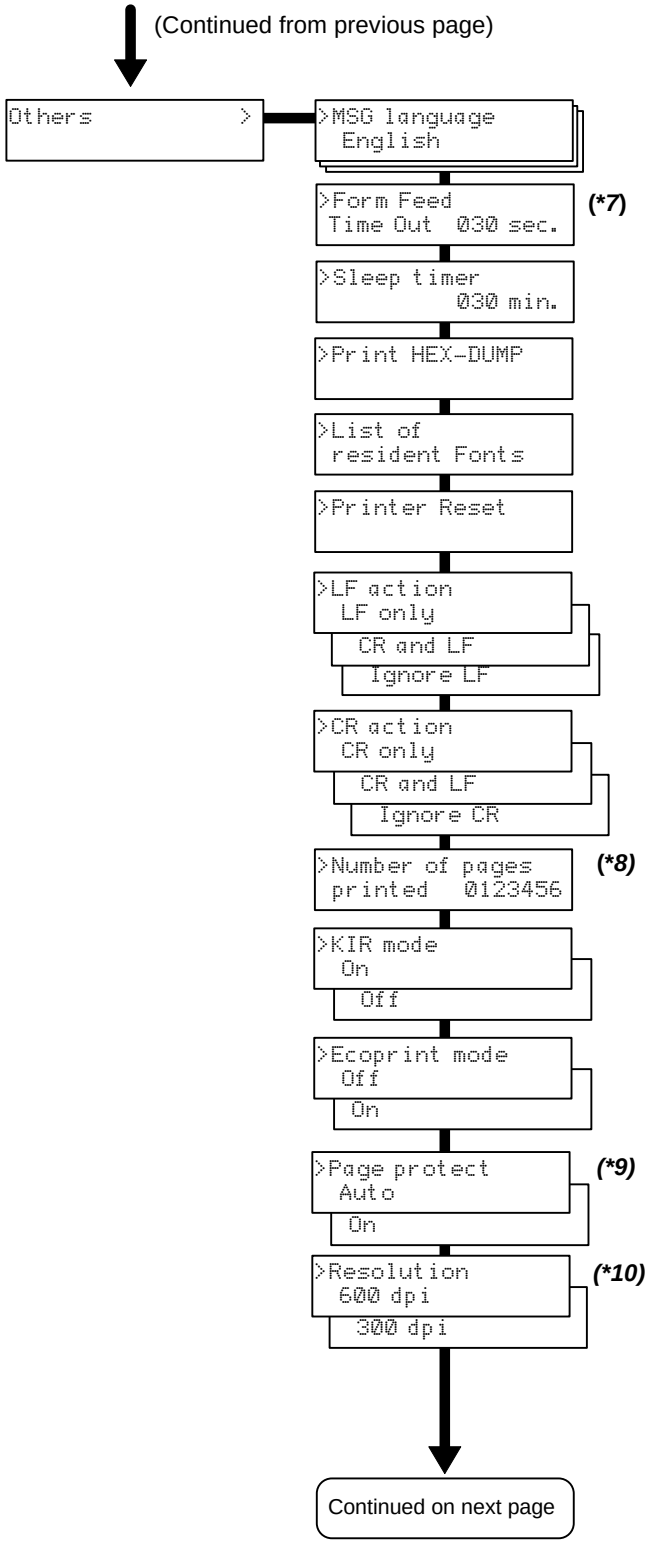
3: You can select either of two Courier fonts, `Dark` (bold) or `Light` (thin), as the default font. The original selection is `Dark`. The selection made applies to both bit map fonts and scalable fonts; the two cannot be set independently.

4: The `>Size` menu is not available for the *Courier* and *Letter-Gothic* fonts. The `>Pitch` menu is displayed instead for these fixed width fonts.



5: This sets whether to enable or disable the difference between A4 size and letter size. Under the default setting of Off, the paper size of the paper source is matched to the paper size given for the data, and if these differ a corresponding error message is displayed. When this is set to On, printing is performed even if the actual paper size differs from the paper size given for the data.

6: This menu is displayed only when Custom # is selected.

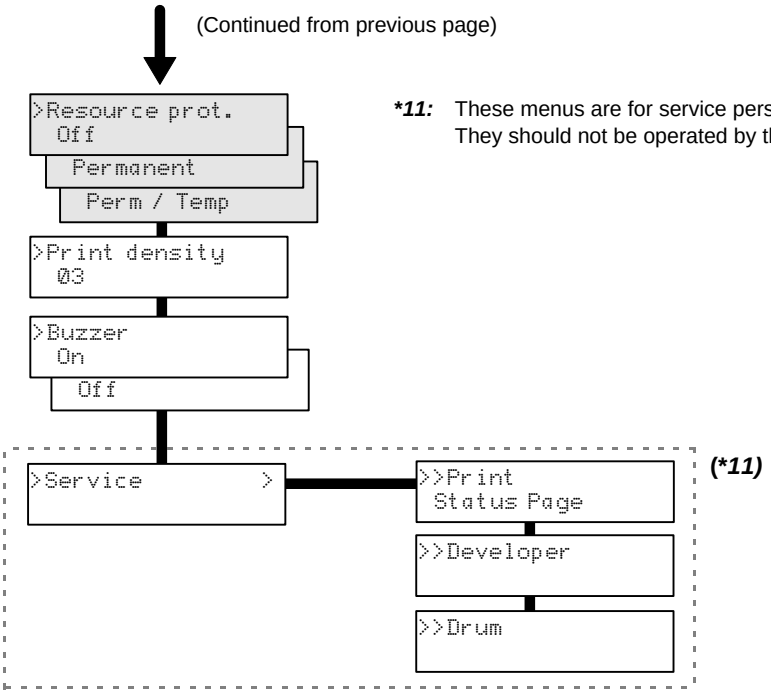


7: After the printer accepts all data and there is no more data from the computer, the printer will wait a set amount of time without printing the final page. Once this preset amount of time has elapsed, the printer will automatically issue a form feed. This timeout setting can be set in 5-second increments up to 495 seconds.

8: This is the total number of pages printed by the printer up to the present time.

9: Although Auto is the default setting and this menu does not usually appear, page protection mode will be forcibly set to on if a Print overrun Press CONTINUE error occurs due to insufficient printer memory. Be sure to return this setting to Auto in order to maintain high printer memory efficiency.

10: This sets the print resolution.



11: These menus are for service personnel. They should not be operated by the user.